



451032

## TECHNICAL MEMORANDUM NO. 1

**DATE:** February 4, 2005  
**PROJECT:** Carter Color Coat (Detroit, Michigan)  
**SUBJECT:** Soil and Groundwater Sampling in Contaminant-Source Areas (April/June 2004)  
**PREPARED BY:** MACTEC Engineering and Consulting of Michigan, Inc.

FEB

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## INTRODUCTION

The Carter Color Coat site is located at 6051 Hastings Street in Detroit, Michigan. A large six-story concrete and steel frame building covers approximately one half of the property. The other half of the property was primarily used for parking. The building was originally constructed and operated by General Motors Corporation (GMC) Fisher Body Division between 1919 and 1984. Facility operations involved automotive stamping of special discs and tools, dye sets, jigs, and fixtures including prototype and model parts. GMC generated halogenated and non-halogenated spent solvents, spent plating wastes, and ignitable and corrosive wastes from its operation at this location. It also received and stored hazardous wastes from other GMC plants. Limited historical documents indicate that the GMC plant had interim status for a container storage area under the requirements of the Resource Conservation and Recovery Act of 1976 (RCRA). GMC closed the container storage area and was released from financial assurance requirements on January 31, 1989.

Between 1985 and 1990, the facility was owned and operated by Cameo Color Coat, Inc. On November 3, 1988 the Michigan Department of Environmental Quality (MDEQ) then known as the Michigan Department of Natural Resources completed an inspection of the facility. It was determined that Cameo Color Coat did not generate hazardous wastes regulated under Act 64 (now Part 111 of Act 451, PA of 1994), and RCRA.

The Property ownership was transferred to Carter Color Coat in October 1, 1990. PRC Environmental Management, Inc. (PRC), under contract to the U.S. Environmental Protection Agency, conducted a preliminary assessment (PA) and visual site inspection (VSI) of the hazardous waste storage facility in April of 1991. This PA/VSI identified six solid waste management units (SWMUs) and one area of concern (AOC). The AOC was associated with a former 1,000-gallon gasoline underground storage tank (UST), which was reported (by PRC) to be empty, but still present on site. The facility was determined to be a conditionally exempt small quantity generator. Carter Color Coat declared bankruptcy in 1992 and abandoned the facility sometime in 1993. GMC conducted a removal action at the property in the early 1990s, removing paints and other hazardous materials from the building.

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## **INTRODUCTION**

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The building has been stripped of all electrical equipment and other valuable salvage. Peeling lead-based paint, asbestos pipe wrap, and wood block flooring litter the interior of the building. The site is fenced but not secure. The primary areas of concern on the property are a trench on the first floor that contains elevated levels of polychlorinated biphenyls (PCBs), polynuclear aromatics (PNAs), lead, and arsenic above residential and industrial direct contact criteria. Samples of the wood block flooring also were found to contain PNAs at elevated levels. Volatile organic compounds (VOCs) have also been identified near the former location of the UST.

This technical memorandum documents the soil and groundwater sampling program conducted at the Carter Color Coat site in Detroit, Michigan by MACTEC Engineering and Consulting of Michigan, Inc. (MACTEC) on behalf of the Michigan Department of Environmental Quality (MDEQ), Southeastern Michigan District Office. The sampling program was completed in accordance with MACTEC's Final Work Plan, dated January 9, 2004.

The technical memorandum documents the sampling program and summarizes soil, concrete, sediment, and groundwater-sample analytical results with a comparison to the Public Act 451, Part 201, Generic Residential and Industrial Cleanup Criteria for Direct Contact, Direct Contact Soil Saturation Concentration Screening Levels, Volatilization to Indoor Air, Ambient Air Infinite Source Volatile Soil Inhalation, and Ambient Air Particulate Soil Inhalation Criteria.

## **SCOPE OF WORK**

Concrete, soil, and groundwater samples were collected from 13 Geoprobe® borings at depths of up to 12 feet below ground surface (bgs) around the former gasoline UST and SWMU 1 (Former GMC Hazardous Waste Drum Storage Area). Additionally, concrete samples were collected from the floors below SWMU 2 (Cleaner Tank Sludge Storage Area), SWMU 3 (Zinc Phosphate Sludge Treatment and Accumulation Area), SWMU 4 (Paint Tank Sludge Storage Area), SWMU 5 (Wastewater Treatment System), and SWMU 6 (Sludge Rolloff Hopper). Sediment samples were collected from SWMUs 3, 4, and 5. Soil samples were collected from below the concrete floors of SWMUs 5 and 6 and liquid samples were collected from SWMU 5. Concrete samples were also collected from beneath the woodblock flooring of floors 1 though 5. The sediment, soil, and groundwater samples were analyzed for VOCs, Semi-Volatile Organic Compounds (SVOCs), PCBs, and Michigan 10 Metals (i.e., arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc). The concrete samples were analyzed for SVOCs, PCBs, and Michigan 10 Metals.

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## **SCHEDULE**

The sampling program was conducted from April 26, 2004 through April 28, 2004 and on June 30, 2004. On June 30, 2004, MACTEC resampled at specific locations because sample jars were broken in shipping in April 2004.

## **PERSONNEL**

Environmental Quality Laboratories, Inc. (EQL) provided Geoprobe® services under subcontract to MACTEC. MACTEC monitored sampling activities and collected soil and groundwater samples for laboratory analysis. Innovative Recycling and Waste Solutions, Inc. (IRWS) provided waste characterization and consolidation under subcontract to MACTEC. IRWS also sampled sediment from SWMUs 3, 4, and 5 and the liquid from SWMU 5. Soil, concrete, and groundwater samples were analyzed by the MDEQ Environmental Laboratory and by a state contract (overflow) laboratory, Trace Analytical Laboratories, Inc. Sediment and liquid samples were analyzed by IRWS.

The following personnel/companies were onsite during the field activities:

<b><u>Name (Company)</u></b>	<b><u>Title or Position</u></b>
Jeff Lippert (MACTEC)	Project Scientist
Jennifer Went (MACTEC)	Staff Engineer
Tom Fox (MACTEC)	Staff II Engineer
EQL	Geoprobe™
IRWS	Waste Inventory and Characterization

## **FIELD ACTIVITIES**

The procedures used during the soil, concrete, sediment, and groundwater-sampling program are described in the following sections. Soil boring, sediment, groundwater and concrete sampling locations are illustrated on Figures TM1-1 through TM1-4.

### **Soil Boring and Soil and Sediment Sample Collection**

Borings were advanced using direct-push sampling equipment Geoprobe® Model 6610DT equipped with a 5-foot-long Macro-Core® soil sampler. The Macro-Core® is a 2-inch-ID, stainless-steel soil sampler, with a removable, clear plastic, thin-walled liner inserted inside the sampler. The sampler was attached to the leading end of the probe rod and hydraulically driven into the subsurface. The rods were then withdrawn, and the sample was retrieved. A new plastic liner was used for each sample collected. Soil samples were collected continuously from the ground surface to the bottom of the boring. The deepest

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boring was 12 feet bgs. Soil samples were screened in the field for total VOCs using a photoionization detector (PID). Sediment samples were collected by IRWS and placed into sample jars for later analysis.

A total of 33 soil and sediment samples (including 3 duplicate samples) were submitted for laboratory analysis. The selection of soil samples for analysis was based on the following criteria:

- evidence of contamination based on elevated PID readings;
- evidence of contamination based on visual or olfactory observations;
- sample interval immediately above water table;
- deepest sample interval in the boring; and
- sample interval previously identified as contaminated in nearby borings.

The samples were submitted for laboratory analysis of VOCs, SVOCs, PCBs, and the Michigan 10 Metals. Samples were collected, preserved, and analyzed in accordance with *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)*.

## Concrete Sampling

Where concrete samples were taken, a rotary hammer was used to pulverize the concrete into a fine powder which was then placed into sample jars and submitted to the MDEQ laboratory for analysis. These samples were submitted to be analyzed for SVOCs, PCBs, and Michigan 10 Metals. A total of 32 concrete samples were collected during this investigation including 4 duplicate samples.

## Groundwater Sampling

Soil borings were advanced using direct-push sampling equipment (Geoprobe® Model 6610DT). Groundwater samples were collected using a 4-foot-long, stainless-steel screen attached to the leading end of the Geoprobe® rod, disposable polyethylene tubing, and a peristaltic pump with a check valve. The borings were advanced to their maximum depth, and an attempt was made to collect a groundwater sample when groundwater was encountered. Prior to sample collection, approximately three times the volume of groundwater present inside the sample tubing was purged. New tubing was used at each boring location.

The depth of the borings, and the soil encountered (mostly clay and fill), made retrieving an adequate volume of groundwater with the peristaltic pump difficult or impossible in some locations. As a result, fewer groundwater samples were obtained for laboratory analysis than anticipated.

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The eight groundwater samples, analyzed for VOCs, SVOCs, PCBs, and Michigan 10 Metals, were discharged directly from the disposable tubing into laboratory-supplied sample containers. Samples were collected, preserved, and analyzed in accordance with *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)*.

After each groundwater sample was collected, the sample depth was recorded in a site-specific fieldbook. Details of daily activities (including times, dates, and methods of sample collection) were also recorded.

### **Waste Sampling**

IRWS was onsite to perform the waste sampling. IRWS's activities included the collection, consolidation, identification, packaging, sampling and characterization of chemical waste materials found on site. Samples were analyzed by Lakeland Laboratories, Inc. A description of sampling procedures can be found in Appendix A (Waste Inventory and Sampling Report).

### **Field and Sample Documentation, Packaging and Shipping**

The samples were packed in coolers with sealed bags of ice and delivered overnight to the MDEQ laboratory in Lansing, Michigan. Chain-of-custody documentation accompanied each set of samples and included the following information: date and time of sample collection, preservation (if used), sample name, type of analysis required, and sampler's signature.

### **Decontamination**

To minimize the potential for cross contamination during sampling, all sampling equipment was decontaminated before each sample location using an Alconox™ and distilled-water solution followed by a distilled-water rinse. New tubing was used at each groundwater sampling location.

### **Investigation-Derived Waste**

With MDEQ approval, purge water and decontamination water generated during groundwater-sampling activities were discharged on the Carter Color Coat property in close proximity to where the sample was taken. Soil cuttings were returned to the borehole from which they were removed.

## **RESULTS**

The analytical results of the sampling program are presented in the following sections.

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## **Groundwater Sampling**

Analytical data for groundwater samples are in Tables TM1-1 (VOCs), TM1-2 (SVOCs), TM1-3 (PCBs), and TM1-4 (metals). Footnotes for all tables are shown in Table TM-17. Groundwater samples from UST-SB4 and SWMU1 SB7 exceeded groundwater contract criteria for benzo(a)pyrene and benzo(b)fluoranthene. SWMU1 SB7 also exceeded groundwater contract criteria for indeno(1,2,3-cd)pyrene. There were no other exceedances of applicable Part 201 residential or industrial criteria.

## **Concrete Sampling**

Analytical results and comparisons to Part 201 Industrial Cleanup Criteria for concrete samples can be found in Tables TM1-5, TM1-6, and TM1-7, for SVOCs, PCBs, and Michigan Ten Metals, respectively. Tables TM1-5.1, TM1-6.1, and TM1-7.1 show analyte concentrations compared to Part 201 Residential Cleanup Criteria. A summary of concentrations of compounds or elements that exceed either industrial or residential criteria are presented in Tables TM1-12, TM1-12.1, TM1-13, and TM1-14.

SVOC concentrations in concrete floor samples F1 CS3; F2 CS3; F3 CS1; and F3 CS3 exceeded residential direct contact criteria for one or more parameters. SVOC concentrations in concrete floor samples F1 CS1 and CS2; F2 CS1 and CS2; F3 CS2; F4 CS1 and CS2; and F5 CS1 exceeded residential and industrial direct contact criteria for one or more parameters. Concrete samples from SWMU3 CS1, SWMU5 CS1, CS2 and CS3, and SWMU6 CS1, had concentrations of PCBs that exceeded the residential and industrial direct contact criteria. Lead concentrations in concrete samples from SWMU3 CS1, SWMU5 CS3 duplicate, and the second floor concrete sample F2 CS2 exceeded residential direct contact criteria. The arsenic concentration in SWMU1 SB7 exceeded the residential direct contact criteria. None of the concrete samples had concentrations of metals that exceeded the industrial cleanup criteria.

## **Soil and Sediment Sampling**

Analytical results for soil/sediment samples are located in Tables TM1-8, TM1-9, TM1-10, and TM1-11 for VOCs, SVOCs, PCBs, and Metals compared to Industrial Cleanup Criteria. Tables TM1-8.1, TM1-9.1, and TM1-10.1 show the same results compared to Part 201 Residential Cleanup Criteria. A summary of concentrations of compounds or elements that exceed either industrial or residential criteria for SVOCs and metals are presented in Tables TM1-12, TM1-12.1, TM1-13, and TM1-14.

Neither PCBs nor VOCs were detected in concentrations above applicable residential or industrial generic cleanup criteria for any soil or sediment sample. Benzo(a)pyrene was detected in sediment samples SWMU5 S2 and S3 at concentrations that exceed the residential direct contact criteria, and sediment

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sample SWMU S3 also had a concentration of benzo(a)pyrene that exceeded the industrial direct contact criteria. Soil samples from UST B4 (7-9); SWMU1 SB1(10-12), SWMU1 SB3(2-4), SWMU1 SB3(7-9), SWMU1 SB5(7-9), SWMU1 SB6(1-3), SWMU1 SB8(2-4) and SWMU1 SB8(6-8) had concentrations of arsenic that exceeded the residential direct contact criteria. None of the soil or sediment samples had concentrations of metals that exceeded the industrial cleanup criteria.

## **RCRA Sample Results**

Groundwater samples were compared to concentrations of RCRA parameters; and soil, sediment, and concrete sample analytical data was compared to 20 times the groundwater concentration for RCRA parameters as a screening tool for all SWMU samples.

The RCRA criteria for lead concentrations was exceeded in soil, sediment or concrete samples from SWMU1 SB1(1-3), SWMU3 CS1, SWMUS CS1, SWMUS CS2, SWMUS CS3, SWMUS S1 duplicate, SWMU6 CS1, and SWMU6 S1(1-3) as shown in Table TM1-15. SWMUS CS3 had a chromium concentration above RCRA criteria.

No groundwater samples had concentrations of parameters of concern above applicable RCRA groundwater criteria as shown in Table TM1-16.

## **Waste Sampling**

IRWS submitted waste samples to Lakeland Laboratories, Inc. Analytical results, waste inventories, and summaries can be found in Appendix A (Waste Inventory and Sampling Report).

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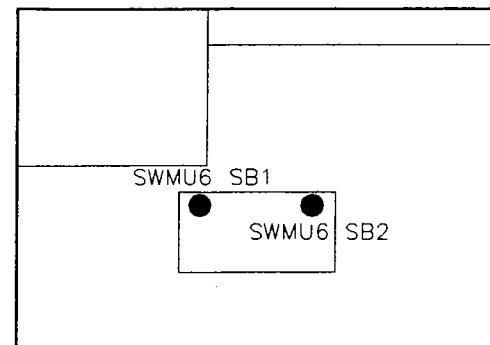
**FIGURES**

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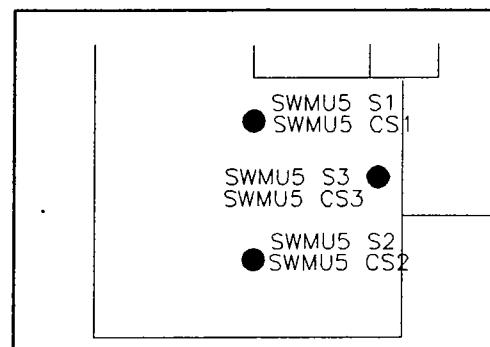
## **FIGURES**

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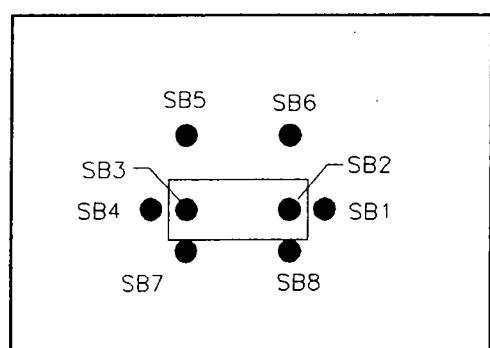
## **FIGURES**



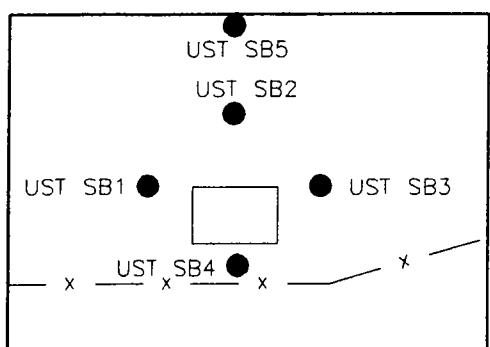
SWMU 6



SWMU 5



SWMU 1



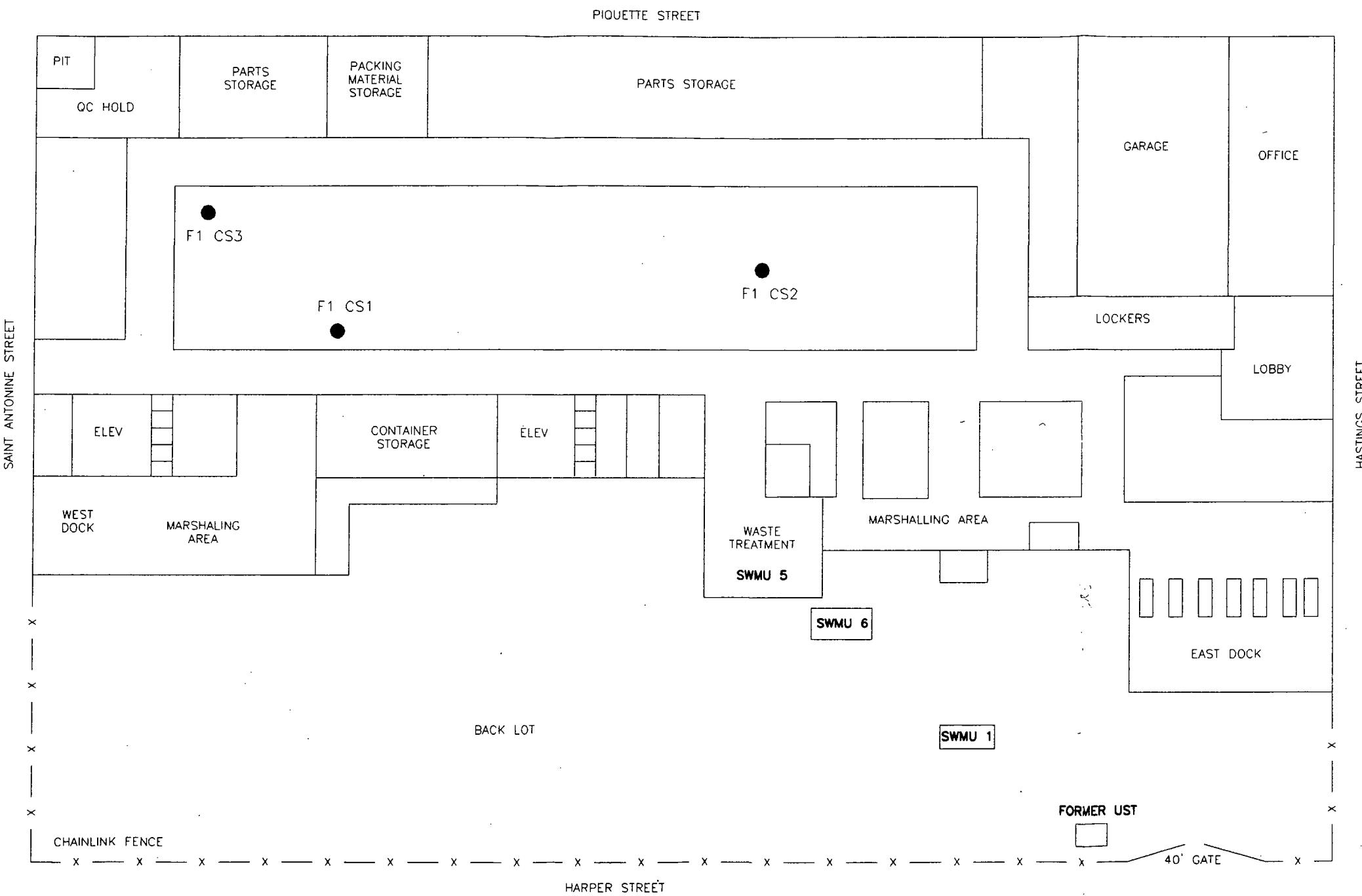
FORMER UST

NOTE: DRAWING NOT TO SCALE.  
SAMPLING LOCATIONS ARE APPROXIMATE.



### Legend

F1 CS1      Sample Locations



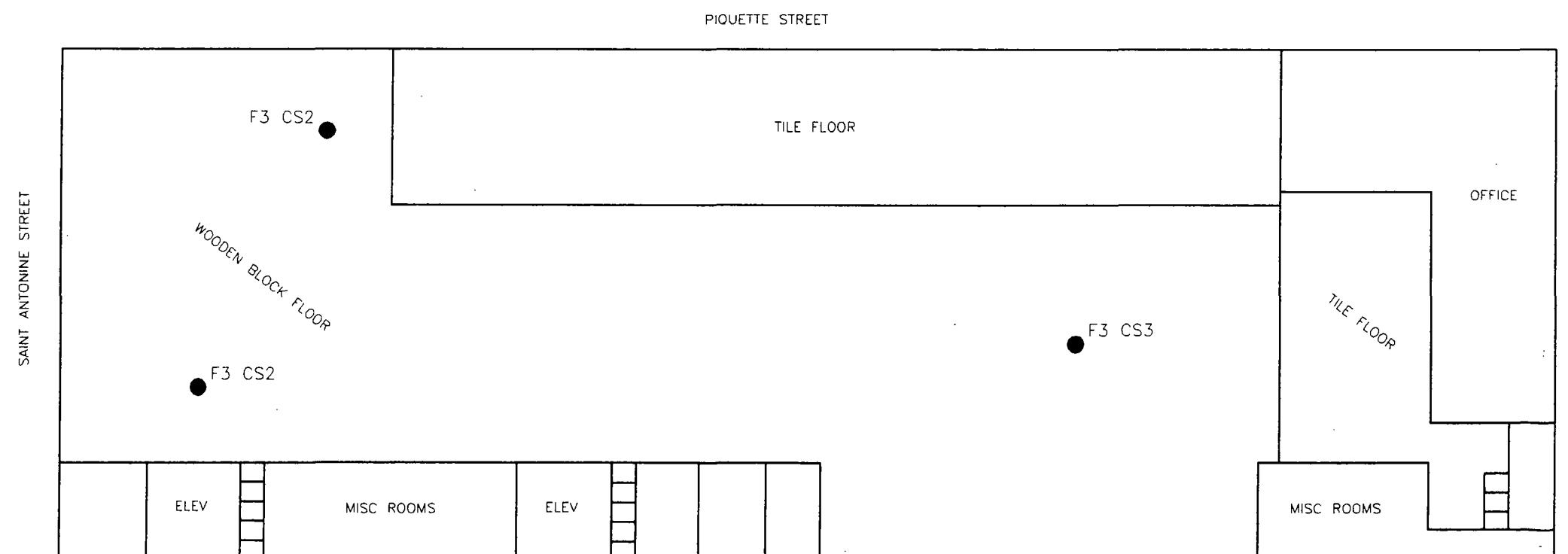
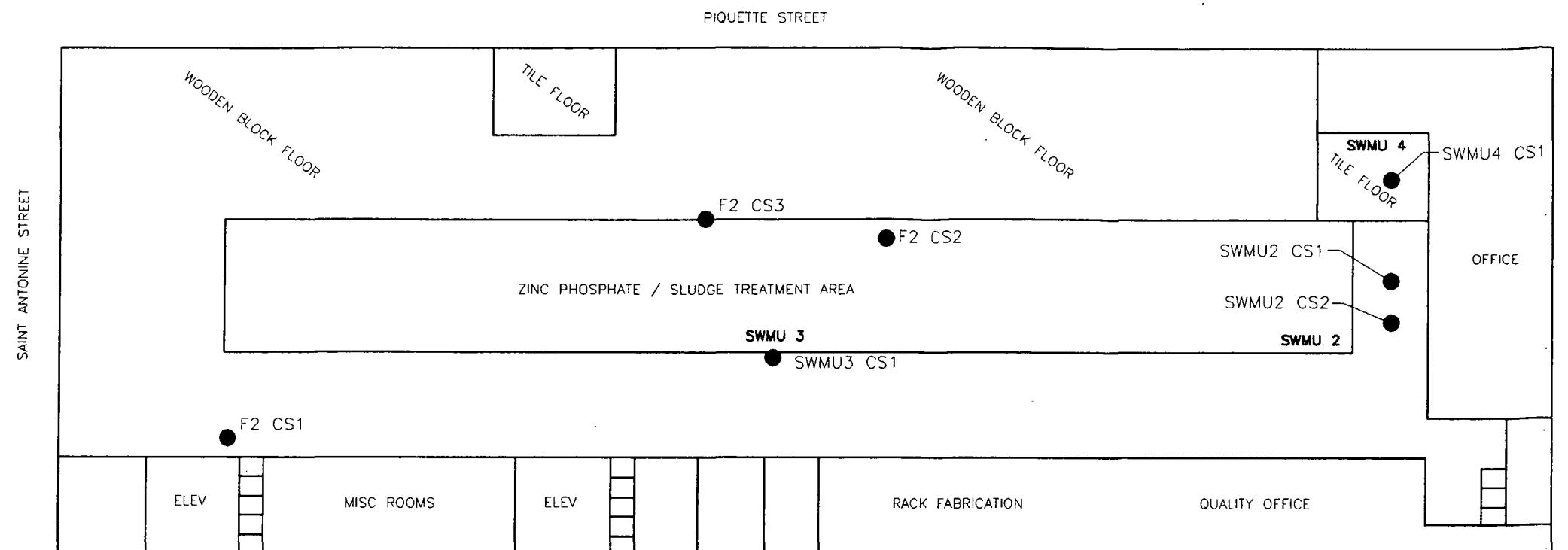
### GROUND FLOOR

DESIGNED BY	JL	8-23-04
DRAWN BY	DP	9-3-04
CHKD. BY	TEF	9-3-04



**MACTEC**  
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FIGURE TM1-1  
PROPERTY FEATURES MAP  
GROUND FLOOR  
CARTER COLOR COAT  
SPRING 2004  
DETROIT, MICHIGAN



NOTE: DRAWING NOT TO SCALE.  
SAMPLING LOCATIONS ARE APPROXIMATE.

**Legend**

Sample Locations  
F1 CS1

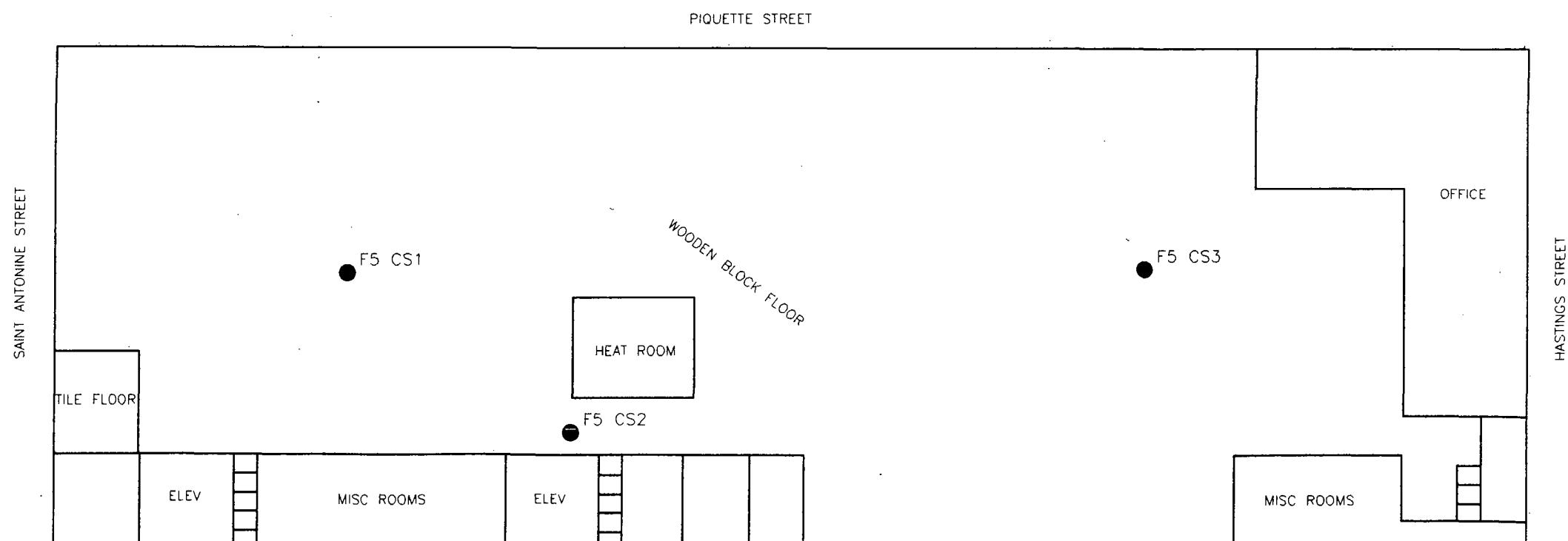
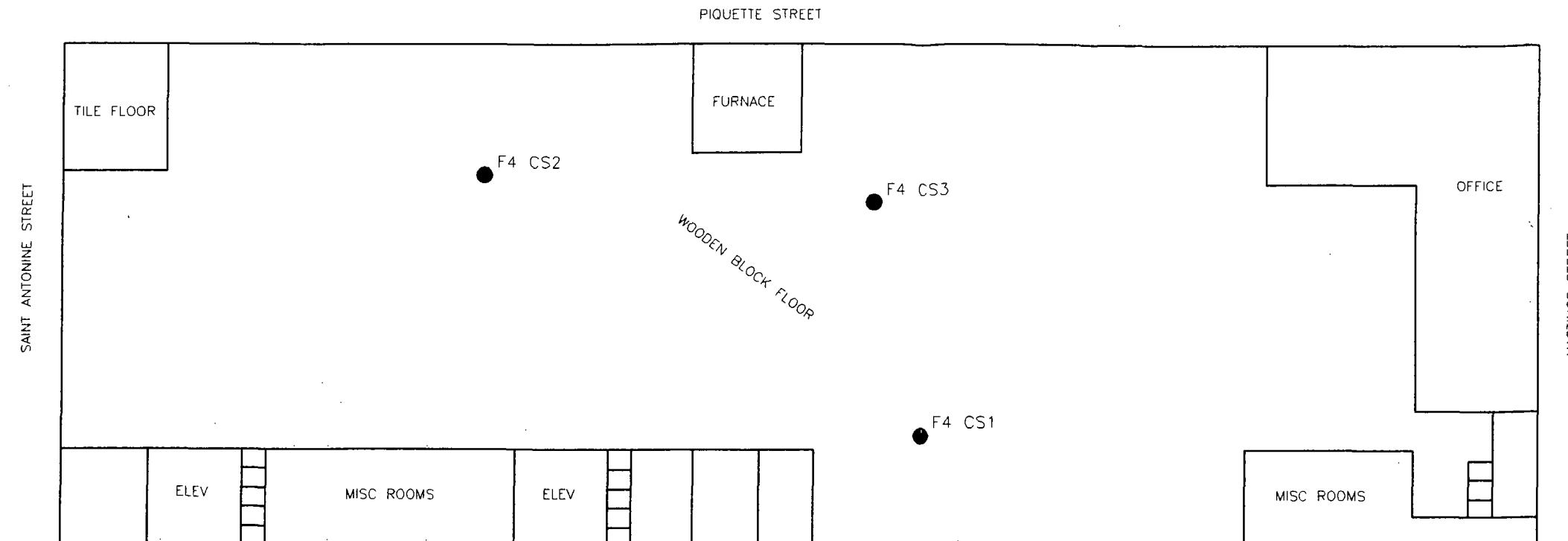
DESIGNED BY	JL	8-23-04
DRAWN BY	DP	9-3-04
CHKD. BY	TEF	9-3-04



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FIGURE TM1-2  
PROPERTY FEATURES MAP  
SECOND AND THIRD FLOORS  
CARTER COLOR COAT  
SPRING 2004  
DETROIT, MICHIGAN



NOTE: DRAWING NOT TO SCALE.  
SAMPLING LOCATIONS ARE APPROXIMATE.

**Legend**

● Sample Locations  
F1 CS1

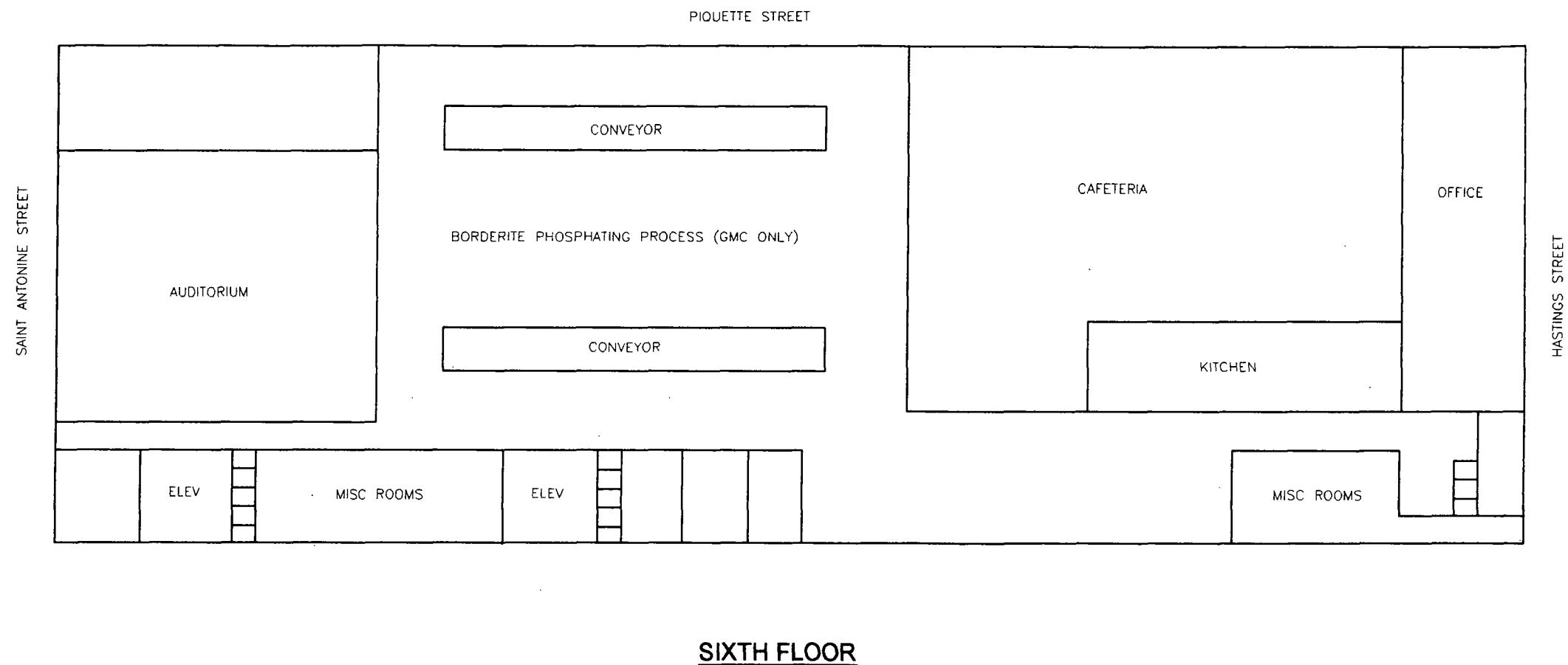


FIGURE TM1-4  
PROPERTY FEATURES MAP  
SIXTH FLOOR  
CARTER COLOR COAT  
SPRING 2004  
DETROIT, MICHIGAN

DESIGNED BY	JL	8-23-04
DRAWN BY	DP	9-3-04
CHKD. BY	TEF	9-3-04



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**TABLES**

**TABLES**

Table TM 1-1  
Volatile Organic Compounds in Groundwater  
Spring 2004  
Carter Color Coat  
Detroit, Michigan

Sample Location:	UST-SB1	UST-SB3	UST-SB4	SWMU1-SB2
Sample Date:	4/26/2004	4/26/2004	4/26/2004	4/26/2004

Volatile Organic Compounds (ug/L)	MDEQ PART 201 CLEANUP CRITERIA				
	Groundwater Contact Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air	Industrial & Commercial II, III, IV Groundwater Volatilization to Indoor Air	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level
1,1,1,2-Tetrachloroethane	30,000	15,000	96,000	ID	ID
1,1,1-Trichloroethane	1.3E+06 (S)	660,000	1.3E+06 (S)	ID	1.3E+06 (S)
1,1,2,2-Tetrachloroethane	4,700	12,000	77,000	ID	ID
1,1,2-Trichloroethane	21,000	17,000	110,000	NA	ID
1,1-Dichloroethane	2.40E+06	1.0E+06	2.3E+06	380,000	ID
1,1-Dichloroethylene	11,000	200	1,300	97,000	140,000
1,2,3-Trichlorobenzene					5 U
1,2,3-Trichloropropane	84,000	ID	ID	NA	ID
1,2,4-Trichlorobenzene	19,000	3.0E+05 (S)	3.0E+05 (S)	NA	3.0E+05 (S)
1,2,4-Trimethylbenzene	56,000 (S)	56,000 (S)	56,000 (S)	56,000 (S)	ID
1,2-Dibromo-3-chloropropane	390	1,200 (S)	1,200 (S)	NA	ID
1,2-Dibromoethane	5.30E+05	ID	ID	ID	5 U
1,2-Dichlorobenzene	1.6E+05 (S)	1.6E+05 (S)	1.6E+05 (S)	NA	1.6E+05 (S)
1,2-Dichloroethane	19,000	9,600	59,000	2.5E+06	ID
1,2-Dichloropropane	16,000	16,000	36,000	550,000	2.8E+06 (S)
1,3,5-Trimethylbenzene	61,000 (S)	61,000 (S)	61,000 (S)	ID	ID
1,3-Dichlorobenzene	2,000	ID	ID	ID	1 U
1,4-Dichlorobenzene	6,400	16,000	74,000 (S)	NA	ID
2-Butanone (MEK)	2.4E+08 (S)	2.4E+08 (S)	2.4E+08 (S)	ID	2.4E+08 (S)
2-Hexanone	5.20E+06	4.2E+06	8.7E+06	NA	ID
2-Methylnaphthalene	25,000 (S)	ID	ID	ID	5 U
2-Propanone (acetone)	3.10E+07	1.0E+09 (D,S)	1.0E+09 (D,S)	1.5E+07	1.0E+09 (D)
4-Methyl-2-pentanone (MIBK)	1.30E+07	2.0E+07 (S)	2.0E+07 (S)	ID	2.0E+07 (S)
Acrylonitrile	14,000	34,000	190,000	6.4E+06	ID
Benzene	11,000	5,600	35,000	68,000	67,000
Bromobenzene	12,000	180,000	390,000	ID	ID
Bromochloromethane					1 U
Bromodichloromethane					20 U
Bromoform	14,000	4,800	37,000	ID	ID
Bromomethane	1.40E+05	470,000	3.1E+06 (S)	ID	ID
Carbon disulfide	70,000	4,000	9,000	ID	ID
Carbon tetrachloride	1.2E+06 (S)	250,000	550,000	13,000	ID
Chlorobenzene	4,600	370	2,400	ID	96,000
Chloroethane	86,000	210,000	470,000 (S)	160,000	ID
Chloroform	4.40E+05	5.7E+06 (S)	5.7E+06 (S)	110,000	ID
Chloromethane	1.50E+05	28,000	180,000	ID	ID
cis-1,2-Dichloroethylene	4.90E+05	8,600	45,000	36,000	210,000
cis-1,3-Dichloropropylene	2.00E+05	93,000	210,000	530,000	ID
Dibromochloromethane					1 U
Dibromomethane	18,000	14,000	110,000	ID	ID
Dichlorodifluoromethane	5.30E+05	ID	ID	ID	1 U
Diethyl ether	3.0E+05 (S)	220,000	300,000	ID	ID
Ethylbenzene	1.7E+05 (S)	110,000	1.7E+05 (S)	43,000	1.7E+05 (S)
Hexachloroethane	1,900	27,000	50,000 (S)	ID	ID
Isopropylbenzene	56,000 (S)	56,000 (S)	56,000 (S)	29,000	ID
M&Pxylene	1.9E+05 (S)	1.9E+05 (S)	1.9E+05 (S)	70,000	1.9E+05 (S)

1 of 4

Prepared by: K. Book

Checked by: M. McGowan

Table TW 1-1

## Volatile Organic Compounds In Groundwater

Spring 2004

Carter Color Coat

Detroit, Michigan

Sample Location:	UST SB1	UST SB3	UST SB4	UST SB2	SWMU1 4/26/2004
Sample Date:					

Volatile Organic Compounds (ug/L)	MDEQ PART 201 CLEANUP CRITERIA					1 U	20 U	1 U	1 U
	Groundwater Contact Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air	Industrial & Commercial II, III, IV Groundwater Volatilization to Indoor Air	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level				
Methyl iodide						1 U	20 U	1 U	1 U
Methylene chloride	2.20E+05	220,000	1.7E+07	ID	ID	5 U	100 U	5 U	5 U
Methyltertiarybutylether	6.10E+05	4.7E+07 (S)	4.7E+07 (S)	ID	ID	1 U	20 U	1 U	1 U
Naphthalene	31,000 (S)	31,000 (S)	31,000 (S)	31,000	31,000 (S)	5 U	560	210	5 U
n-Butylbenzene	5,900	ID	ID	ID	ID	1 U	20 U	1 U	1 U
n-Propylbenzene	15,000	ID	ID	ID	ID	1 U	91	250	1 U
o-Xylene	1.9E+05 (S)	1.9E+05 (S)	1.9E+05 (S)	70,000	1.9E+05 (S)	1 U	20 U	1.6	1 U
p-Isopropyl toluene						1 U	20 U	15	1 U
sec-Butylbenzene	4,400	ID	ID	ID	ID	1 U	20 U	25	1 U
Styrene	9,700	170,000	3.1E+05 (S)	140,000	3.1E+05 (S)	1 U	20 U	1 U	1 U
tert-Butylbenzene	8,900	ID	ID	ID	ID	1 U	20 U	1 U	1 U
Tetrachloroethylene	12,000	25,000	170,000	ID	2.0E+05 (S)	1 U	20 U	1 U	1 U
Tetrahydrofuran	1.60E+06	6.9E+06	1.6E+07	60,000	3.6E+06	5 U	100 U	5 U	5 U
Toluene	5.3E+05 (S)	5.3E+05 (S)	5.3E+05 (S)	61,000	ID	1 U	20 U	1.4	1 U
trans-1,2-Dichloroethylene	2.20E+05	85,000	200,000	230,000	ID	1 U	20 U	1 U	1 U
trans-1,3-Dichloropropylene						1 U	20 U	1 U	1 U
trans-1,4-Dichloro-2-butene						5 U	100 U	5 U	5 U
Trichloroethylene	22,000	15,000	97,000	ID	1.1E+06 (S)	1 U	20 U	1 U	1 U
Trichlorofluoromethane	1.1E+06 (S)	1.1E+06 (S)	1.1E+06 (S)	ID	1.1E+06 (S)	1 U	20 U	1 U	1 U
Vinyl chloride	1,000	1,100	13,000	33,000	ID	1 U	20 U	1 U	1 U

Table I.M-1-1

## Volatile Organic Compounds In Groundwater

Spring 2004

Carter Color Coat

Detroit, Michigan

Sample Location:	SWMU1	SWMU1	SWMU1	SWMU1
Sample Date:	SB3 4/26/2004	SB4 4/26/2004	SB5 4/26/2004	SB7 4/26/2004

Volatile Organic Compounds ( $\mu\text{g/L}$ )	MDEQ PART 201 CLEANUP CRITERIA					1 U	1 U	1 U	1 U
	Groundwater Contact Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air	Industrial & Commercial II, III, IV Groundwater Volatilization to Indoor Air	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level				
1,1,1,2-Tetrachloroethane	30,000	15,000	96,000	ID	ID	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1.3E+06 (S)	660,000	1.3E+06 (S)	ID	1.3E+06 (S)	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	4,700	12,000	77,000	ID	ID	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	21,000	17,000	110,000	NA	ID	1 U	1 U	1 U	1 U
1,1-Dichloroethane	2.40E+06	1.0E+06	2.3E+06	380,000	ID	1 U	1 U	1 U	1 U
1,1-Dichloroethylene	11,000	200	1,300	97,000	140,000	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene						5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	84,000	ID	ID	NA	ID	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	19,000	3.0E+05 (S)	3.0E+05 (S)	NA	3.0E+05 (S)	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	56,000 (S)	56,000 (S)	56,000 (S)	56,000 (S)	ID	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	390	1,200 (S)	1,200 (S)	NA	ID	5 U	5 U	5 U	5 U
1,2-Dibromoethane	5.30E+05	ID	ID	ID	ID	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1.6E+05 (S)	1.6E+05 (S)	1.6E+05 (S)	NA	1.6E+05 (S)	1 U	1 U	1 U	1 U
1,2-Dichloroethane	19,000	9,600	59,000	2.5E+06	ID	1 U	1 U	1 U	1 U
1,2-Dichloropropane	16,000	16,000	36,000	550,000	2.8E+06 (S)	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	61,000 (S)	61,000 (S)	61,000 (S)	ID	ID	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	2,000	ID	ID	ID	ID	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	6,400	16,000	74,000 (S)	NA	ID	1 U	1 U	1 U	1 U
2-Butanone (MEK)	2.4E+08 (S)	2.4E+08 (S)	2.4E+08 (S)	ID	2.4E+08 (S)	5 U	5 U	5 U	5 U
2-Hexanone	5.20E+06	4.2E+06	8.7E+06	NA	ID	5 U	5 U	5 U	5 U
2-Methylnaphthalene	25,000 (S)	ID	ID	ID	ID	5 U	5 U	5 U	5 U
2-Propanone (acetone)	3.10E+07	1.0E+09 (D,S)	1.0E+09 (D,S)	1.5E+07	1.0E+09 (D)	20 U	20 U	20 U	20 U
4-Methyl-2-pentanone (MIBK)	1.30E+07	2.0E+07 (S)	2.0E+07 (S)	ID	2.0E+07 (S)	5 U	5 U	5 U	5 U
Acrylonitrile	14,000	34,000	190,000	6.4E+06	ID	5 U	5 U	5 U	5 U
Benzene	11,000	5,600	35,000	68,000	67,000	1 U	1 U	1 U	1 U
Bromobenzene	12,000	180,000	390,000	ID	ID	1 U	1 U	1 U	1 U
Bromochloromethane						1 U	1 U	1 U	1 U
Bromodichloromethane						1 U	1 U	1 U	1 U
Bromoform	1.40E+05	470,000	3.1E+06 (S)	ID	ID	1 U	1 U	1 U	1 U
Bromomethane	70,000	4,000	9,000	ID	ID	5 U	5 U	5 U	5 U
Carbon disulfide	1.2E+06 (S)	250,000	550,000	13,000	ID	1 U	1 U	1 U	1 U
Carbon tetrachloride	4,600	370	2,400	ID	96,000	1 U	1 U	1 U	1 U
Chlorobenzene	86,000	210,000	470,000 (S)	160,000	ID	1 U	1 U	1 U	1 U
Chloroethane	4.40E+05	5.7E+06 (S)	5.7E+06 (S)	110,000	ID	5 U	5 U	5 U	5 U
Chloroform	1.50E+05	28,000	180,000	ID	ID	1 U	1 U	1 U	1 U
Chloromethane	4.90E+05	8,600	45,000	36,000	210,000	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethylene	2.00E+05	93,000	210,000	530,000	ID	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropylene						1 U	1 U	1 U	1 U
Dibromochloromethane	18,000	14,000	110,000	ID	ID	1 U	1 U	1 U	1 U
Dibromomethane	5.30E+05	ID	ID	ID	ID	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	3.0E+05 (S)	220,000	300,000	ID	ID	5 U	5 U	5 U	5 U
Diethyl ether	3.50E+07	6.1E+07 (S)	6.1E+07 (S)	650,000	6.1E+07 (S)	5 U	5 U	5 U	5 U
Ethylbenzene	1.7E+05 (S)	110,000	1.7E+05 (S)	43,000	1.7E+05 (S)	1 U	1 U	1 U	1 U
Hexachloroethane	1,900	27,000	50,000 (S)	ID	ID	5 U	5 U	5 U	5 U
Isopropylbenzene	56,000 (S)	56,000 (S)	56,000 (S)	29,000	ID	1 U	1 U	1 U	1 U
M&PXylene	1.9E+05 (S)	1.9E+05 (S)	1.9E+05 (S)	70,000	1.9E+05 (S)	2 U	2 U	2 U	2 U

3 of 4

Prepared by: K. Book  
Checked by: M. McGowan

## Volatile Organic Compounds in Groundwater

Spring 2004

Carter Color Coat

Detroit, Michigan

Sample Location:	SWMU1 SB3	SWMU1 SB4	SWMU1 SB5	SWMU1 SB7
Sample Date:	4/26/2004	4/26/2004	4/26/2004	4/26/2004

Volatile Organic Compounds ( $\mu\text{g/L}$ )	MDEQ PART 201 CLEANUP CRITERIA					Acute Inhalation Screening Level
	Groundwater Contact Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air	Industrial & Commercial II, III, IV Groundwater Volatilization to Indoor Air	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level	
Methyl iodide						1 U
Methylene chloride	2.20E+05	220,000	1.7E+07	ID	ID	5 U
Methyltertiarybutylether	6.10E+05	4.7E+07 (S)	4.7E+07 (S)	ID	ID	1 U
Naphthalene	31,000 (S)	31,000 (S)	31,000 (S)	31,000	31,000 (S)	5 U
n-Butylbenzene	5,900	ID	ID	ID	1 U	1 U
n-Propylbenzene	15,000	ID	ID	ID	1 U	1 U
o-Xylene	1.9E+05 (S)	1.9E+05 (S)	1.9E+05 (S)	70,000	1.9E+05 (S)	1 U
p-Isopropyl toluene						1 U
sec-Butylbenzene	4,400	ID	ID	ID	1 U	1 U
Styrene	9,700	170,000	3.1E+05 (S)	140,000	3.1E+05 (S)	1 U
tert-Butylbenzene	8,900	ID	ID	ID	1 U	1 U
Tetrachloroethylene	12,000	25,000	170,000	ID	2.0E+05 (S)	1 U
Tetrahydrofuran	1.60E+06	6.9E+06	1.6E+07	60,000	3.6E+06	5 U
Toluene	5.3E+05 (S)	5.3E+05 (S)	5.3E+05 (S)	61,000	ID	1 U
trans-1,2-Dichloroethylene	2.20E+05	85,000	200,000	230,000	ID	1 U
trans-1,3-Dichloropropylene						1 U
trans-1,4-Dichloro-2-butene						5 U
Trichloroethylene	22,000	15,000	97,000	ID	1.1E+06 (S)	1 U
Trichlorofluoromethane	1.1E+06 (S)	1.1E+06 (S)	1.1E+06 (S)	ID	1.1E+06 (S)	1 U
Vinyl chloride	1,000	1,100	13,000	33,000	ID	1 U

Table -2  
Semi-Volatile Organic Compounds In Groundwater  
Spring 2004  
Carter Color Coat  
Detroit, Michigan

Sample Location	UST-SB1	UST-SB3	UST-SB4	SWMU1-SB2	SWMU1-SB3	SWMU1-SB4	TSMU1-SB5	SWMU1-SB7
Sample Date	4/26/2004	4/26/2004	4/26/2004	4/26/2004	4/26/2004	4/26/2004	4/26/2004	4/26/2004

Semivolatile Organic Compounds (ug/L)	MDEQ PART 201 CLEANUP CRITERIA											
	Groundwater Contact Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air	Industrial & Commercial II, III, IV Groundwater Volatilization to Indoor Air	Flammability and Explosivity Screening Level	Inhalation Screening Level							
1,2,4-Trichlorobenzene	19,000	3.0E+05 (S)	3.0E+05 (S)	NA	3.0E+05 (S)	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
1,2-Dichlorobenzene	1.6E+05 (S)	1.6E+05 (S)	1.6E+05 (S)	NA	1.6E+05 (S)	1.0 U	1.0 U	1.0 U	11 U	1.2 U	1.1 U	1.1 U
1,3-Dichlorobenzene	2,000	ID	ID	ID	ID	1.0 U	1.0 U	1.0 U	11 U	1.2 U	1.1 U	1.1 U
1,4-Dichlorobenzene	6,400	16,000	74,000 (S)	NA	ID	1.0 U	1.0 U	1.0 U	11 U	1.2 U	1.1 U	1.1 U
2,4,5-Trichlorophenol	1.70E+05	NLV	NLV	ID	ID	10 U	10 U	10 U	110 U	12 U	11 U	11 U
2,4,6-Trichlorophenol	10,000	NLV	NLV	ID	ID	10 U	10 U	10 U	110 U	12 U	11 U	11 U
2,4-Dichlorophenol	48,000	NLV	NLV	ID	ID	10 U	10 U	10 U	110 U	12 U	11 U	11 U
2,4-Dimethylphenol	5.20E+05	NLV	NLV	ID	ID	50 U	51 U	50 U	550 U	59 U	56 U	55 U
2,4-Dinitrophenol	8,600	NLV	NLV	ID	ID	5.0 U	5.1 U	5.0 U	55 U	5.9 U	5.6 U	5.5 U
2,6-Dinitrotoluene						5.0 U	5.1 U	5.0 U	55 U	5.9 U	5.6 U	5.5 U
2-Chloronaphthalene	6,700 (S)	ID	ID	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
2-Chlorophenol	94,000	ID	ID	ID	ID	10 U	10 U	10 U	110 U	12 U	11 U	11 U
2-Methyl-4,6-dinitrophenol	9,500	NLV	NLV	ID	ID	50 U	51 U	50 U	550 U	59 U	56 U	55 U
2-Methylnaphthalene	25,000 (S)	ID	ID	ID	ID	5 U	46	160	55 U	5.9 U	5.6 U	5.5 U
2-Methylphenol	8.10E+05	NLV	NLV	NA	ID	10 U	10 U	10 U	110 U	12 U	11 U	11 U
2-Nitroaniline						20 U	20 U	20 U	220 U	24 U	22 U	22 U
2-Nitrophenol	79,000	NLV	NLV	ID	ID	10 U	10 U	10 U	110 U	12 U	11 U	11 U
3/4-Methylphenol	8.10E+05	NLV	NLV	NA	ID	20 U	20 U	20 U	220 U	24 U	22 U	22 U
3-Nitroaniline						20 U	20 U	20 U	220 U	24 U	22 U	22 U
4-Bromophenyl-phenylether						2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
4-Chloro-3-methylphenol	79,000	NLV	NLV	ID	ID	10 U	10 U	10 U	110 U	12 U	11 U	11 U
4-Chlorophenyl-phenylether						1 U	1 U	1 U	11 U	1.2 U	1.1 U	1.1 U
4-Nitroaniline						20 U	20 U	20 U	220 U	24 U	22 U	22 U
4-Nitrophenol						50 U	51 U	50 U	550 U	59 U	56 U	55 U
Acenaphthene	4,200 (S)	4,200 (S)	4,200 (S)	ID	ID	1.0 U	5.9	3.2	11 U	1.2 U	1.1 U	1.1 U
Acenaphthylene	3,900 (S)	3,900 (S)	3,900 (S)	ID	ID	1.0 U	1.0 U	1.0 U	11 U	1.2 U	1.1 U	1.1 U
Anthracene	42 (S)	43 (S)	43 (S)	ID	ID	1.0 U	1.0	4.2	11 U	1.2 U	1.1 U	1.1 U
Azobenzene	1,600	6,400 (S)	6,400 (S)	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
Benz(a)anthracene	9.4 (S,AA)	NLV	NLV	ID	ID	1.0 U	1.0 U	4.4	11 U	2.2	1.1 U	1.1 U
Benz(a)pyrene	2.0 (M,AA)	NLV	NLV	ID	ID	2.0 U	2.0 U	2.8	22 U	2.4 U	2.2 U	2.2 U
Benz(b)fluoranthene	2.0 (M,AA)	ID	ID	ID	ID	2.0 U	2.0 U	2.7	22 U	2.4 U	2.2 U	2.2 U
Benz(g,h,i)perylene	5.0 (M,AA)	NLV	NLV	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
Benz(k)fluoranthene	5.0 (M,AA)	NLV	NLV	ID	ID	2.0 U	2.0 U	2.5	22 U	2.4 U	2.2 U	2.2 U
bis(2-Chloroethyl)ether						2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
bis(2-Chloroisopropyl)ether	5,700	38,000	210,000	1.70E+07	1.70E+07	1.0 U	1.0 U	1.0 U	11 U	1.2 U	1.1 U	1.1 U
bis(2-Ethylhexyl)phthalate	320 (AA)	NLV	NLV	NA	340 (S)	2.0 U	2.0 U	24	22 U	2.4 U	2.2 U	2.2 U
Butylbenzylphthalate	2,700 (S)	NLV	NLV	ID	ID	1.0 U	1.0 U	1.0 U	11 U	1.2 U	1.1 U	1.1 U
Carbazole	7,400	NLV	NLV	ID	ID	10 U	72	10 U	110 U	12 U	11 U	11 U
Chrysene	5.0 (M,AA)	ID	ID	ID	ID	1.0 U	1.0 U	3.8	11 U	2.3	1.1 U	1.1 U
Dibenzo(a,h)anthracene	2.0 (M,AA)	NLV	NLV	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
Dibenzo-furan						5.0 U	5.1 U	5.0 U	55 U	5.9 U	5.6 U	5.5 U
Diethylphthalate	1.1E+06 (S)	NLV	NLV	NA	ID	1.0 U	1.0 U	1.0 U	11 U	1.2 U	1.1 U	1.1 U
Dimethylphthalate	4.2E+06 (S)	NLV	NLV	NA	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
Di-n-butylphthalate	11,000 (S)	NLV	NLV	NA	ID	1.0 U	1.0 U	1.0 U	11 U	1.2 U	1.1 U	1.1 U
Di-n-octylphthalate	400	NLV	NLV	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
Fluorene	2,000 (S)	2,000 (S)	2,000 (S)	ID	ID	1.0 U	4.2	4.0	11 U	1.2 U	1.1 U	1.1 U
Fluoranthene	210 (S)	210 (S)	210 (S)	ID	ID	1.0 U	2.5	14	18	4.6	1.1 U	2.3
Hexachlorobenzene	4.6	440	3,000	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
Hexachlorobutadiene	400	1,600	3,200 (S)	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
Hexachlorocyclopentadiene	1,600	130	420	ID	ID	10 U	10 U	10 U	110 U	12 U	11 U	11 U
Hexachloroethane	1,900	27,000	50,000 (S)	ID	ID	1.0 U	1.0 U	1.0 U	11 U	12 U	11 U	11 U
Indeno(1,2,3-cd)pyrene	2.0 (A,A,M)	NLV	NLV	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
Isophorone	9.90E+05	NLV	NLV	ID	1.20E+07	1.0 U	1.0 U	1.0 U	11 U	1.2 U	1.1 U	1.1 U
Naphthalene	31,000 (S)	31,000 (S)	31,000 (S)	NA	31,000 (S)	1.0 U	340	160	11 U	12 U	11 U	11 U
Nitrobenzene	11,000	2.80E+05	5.50E+05	NA	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
N-Nitrosodimethylamine						5.0 U	5.1 U	5.0 U	55 U	5.9 U	5.6 U	5.5 U
N-Nitrosodi-n-propylamine	360	NLV	NLV	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
N-Nitrosodiphenylamine	35,000 (S)	NLV	NLV	ID	ID	2.0 U	2.0 U	2.0 U	22 U	2.4 U	2.2 U	2.2 U
Pentachlorophenol	200	NLV	NLV	ID	ID	50 U	51 U	50 U	550 U	59 U	56 U	55 U
Phenanthrene	1,000 (S)	1,000 (S)	1,000 (S)	ID	ID	1.0 U	9.3	14	11 U	2.6	1.1 U	1.3
Phenol	2.90E+07	NLV	NLV	NA	ID	10 U	10 U	10 U	110 U	12 U	11 U	11 U
Pyrene	140 (S)	140	140	ID	ID	1.0 U	1.6	9.9	16	4.0	1.1 U	2.2

**Table TM 1-3**  
**PCBs in Groundwater**  
**Spring 2004**  
**Carter Color Coat**  
**Detroit, Michigan**

Sample Location:	UST SB1	SBMU1 SB2	SWMU1 SB3
Sample Date:	4/26/2004	4/26/2004	4/26/2004

MDEQ PART 201 CLEANUP CRITERIA						
Groundwater Contact Criteria	Industrial & Residential & Commercial I		Commercial II, III, IV Groundwater	Flammability and Explosivity	Acute Inhalation Screening Level	
	Groundwater	Volatilization to Indoor Air	Volatilization to Indoor Air	Screening Level		
<b>Polychlorinated Biphenyls (<math>\mu\text{g/L}</math>)</b>						
Aroclor-1016	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.10 U
Aroclor-1221	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.10 U
Aroclor-1232	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.10 U
Aroclor-1242	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.10 U
Aroclor-1248	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.10 U
Aroclor-1254	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.10 U
Aroclor-1260	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.10 U
Aroclor-1262	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.10 U
Aroclor-1268	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.10 U

**Table TM 1-3**  
**PCBs in Groundwater**  
**Spring 2004**  
**Carter Color Coat**  
**Detroit, Michigan**

Sample Location	SWMU1 SB4	SWMU1 SB5	SWMU1 SB7
Sample Date:	4/26/2004	4/26/2004	4/26/2004

		MDEQ PART 201 CLEANUP CRITERIA								
Groundwater Contact Criteria	Volatilization to Indoor Air	Industrial & Residential & Commercial I Groundwater		Commercial II, III, IV Groundwater		Flammability and Explosivity Screening Level	Acute Inhalation Screening Level			
		Residential & Commercial I Groundwater	Industrial & Residential & Commercial II, III, IV Groundwater	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level					
		Residential & Commercial I Groundwater	Industrial & Residential & Commercial II, III, IV Groundwater	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level					
<b>Polychlorinated Biphenyls (ug/L)</b>										
Aroclor-1016	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.11 U	0.10 U	0.13 U		
Aroclor-1221	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.11 U	0.10 U	0.13 U		
Aroclor-1232	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.11 U	0.10 U	0.13 U		
Aroclor-1242	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.11 U	0.10 U	0.13 U		
Aroclor-1248	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.11 U	0.10 U	0.13 U		
Aroclor-1254	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.11 U	0.10 U	0.13 U		
Aroclor-1260	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.11 U	0.10 U	0.13 U		
Aroclor-1262	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.11 U	0.10 U	0.13 U		
Aroclor-1268	3.3 (AA)	45 (S)	45 (S)	ID	ID	0.11 U	0.10 U	0.13 U		

Table TM 1-4  
 Metals In Groundwater  
 Spring 2004  
 Carter Color Coat  
 Detroit, Michigan

Sample Location:	UST-SB1	GUST-SB3	UST-SB4	SWMU1-SB2	SWMU1-SB3	SWMU1-SB4	SWMU1-SB5	SWMU1-SB7
Sample Date:	4/26/2004	4/26/2004	4/26/2004	4/26/2004	4/26/2004	4/26/2004	4/26/2004	4/26/2004

MDEQ PART 201 CLEANUP CRITERIA													
Metals (ug/L)	Residential & Commercial I		Industrial & Commercial II, III, IV		Flammability and Explosivity	Acute Screening Level	Inhalation Screening Level						
	Groundwater Contact Criteria	Volatilization to Indoor Air	Groundwater	Volatilization to Indoor Air									
Mercury	56 (S)	56 (S)	56 (S)	ID	ID	0.2 U	0.2 U	0.2 U	0.2 U	1.2	0.7	1.1	0.2
Arsenic	4,300	NLV	NLV	ID	ID	2.5	8.0	24	20	57	53	57	16
Barium	1.40E+07	NLV	NLV	ID	ID	35	39	180	180	1700	1400	D	1400 D 390
Cadmium	1.90E+05	NLV	NLV	ID	ID	0.2 U	0.21	0.63	0.71	3.5	5.2	8.9	3.0
Chromium	4.60E+05	NLV	NLV	ID	ID	3.6	1.5	40	33	240	310	280	76
Copper	7.40E+06	NLV	NLV	ID	ID	4.7	6.7	50	50	170	310	240	79
Lead	ID	NLV	NLV	ID	ID	4.5	8.5	40	67	150	420	440	640
Selenium	9.70E+05	NLV	NLV	ID	ID	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Silver	1.50E+06	NLV	NLV	ID	ID	0.5 U	0.5 U	0.5 U	0.5 U	0.59	3.1	3.5	0.94
Zinc	1.10E+08	NLV	NLV	ID	ID	12	10 U	130	190	420	1000	D	920 280

**Table TM 1-5**  
**Semi-Volatile Compounds in concrete (Industrial Criteria)**  
**Spring 2004**  
**Carter Color Coat**  
**Detroit, Michigan**

Sample Location:	SWMU1 SB1	SWMU1 SB2	SWMU1 SB3	SWMU1 SB3	SWMU1 SB4	SWMU1 SB5
Sample Date:	(CON)	(CON)	(CON)	(CON)	(CON)	(CON)
	4/26/2004	4/26/2004	4/26/2004	4/27/2004	4/26/2004	4/26/2004

MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA						
	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Infinite Source Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation	
<b>Semi-Volatile Organic Compounds</b> <b>(ug/Kg)</b>						
1,2,4-Trichlorobenzene	1.1E+06 (C,DD)	1.1E+06	1.10E+06 ( C)	3.40E+07	1.10E+10	210 U
1,2-Dichlorobenzene	2.1E+05 ( C)	2.10E+05	2.10E+05 ( C)	4.6E+07 ( C)	4.40E+10	100 U
1,3-Dichlorobenzene	1.7E+05 ( C)	1.70E+05	ID	ID	ID	100 U
1,4-Dichlorobenzene	1.9E+06	NA	1.00E+05	2.60E+05	5.70E+08	100 U
2,4,5-Trichlorophenol	7.30E+07	NA	NLV	NLV	1.00E+10	340 U
2,4,6-Trichlorophenol	3.3E+06	NA	NLV	NLV	1.30E+09	340 U
2,4-Dichlorophenol	1.8E+06 (C,DD)	1.8E+06	NLV	NLV	2.30E+09	340 U
2,4-Dimethylphenol	3.6E+07	NA	NLV	NLV	2.10E+09	340 U
2,4-Dinitrophenol						1,800 U
2,4-Dinitrotoluene	2.20E+05	NA	NLV	NLV	2.00E+07	340 U
2,6-Dinitrotoluene						340 U
2-Chloronaphthalene	1.80E+08	NA	ID	ID	ID	210 U
2-Chlorophenol	4.50E+06	1.90E+07	ID	ID	ID	340 U
2-Methyl-4,6-dinitrophenol	2.60E+05	NA	NLV	NLV	ID	1,800 U
2-Methylnaphthalene	2.60E+07	NA	ID	ID	ID	260 U
2-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	340 U
2-Nitroaniline						1,800 U
2-Nitrophenol	2.0E+06	NA	NLV	NLV	ID	340 U
3/4-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	690 U
3-Nitroaniline						1,800 U
4-Bromophenyl-phenylether						210 U
4-Chloro-3-methylphenol	1.5E+07	NA	NLV	NLV	ID	340 U
4-Chlorophenyl-phenylether						100 U
4-Nitroaniline						1,800 U
4-Nitrophenol						1,800 U
Acenaphthene	1.30E+08	NA	3.50E+08	9.70E+07	6.20E+09	100 U
Acenaphthylene	5.2E+06	NA	3.00E+06	2.70E+06	1.00E+09	100 U
Anthracene	7.30E+08	NA	1.00E+09 (D)	1.60E+09	2.90E+10	100 U
Azobenzene	6.60E+05	NA	3.20E+07	2.10E+06	1.30E+08	210 U
Benzo(a)anthracene	80,000	NA	NLV	NLV	ID	100 U
Benzo(a)pyrene	8,000	NA	NLV	NLV	1.90E+06	210 U
Benzo(b)fluoranthene	80,000	NA	NLV	NLV	ID	210 U
Benzo(g,h,i)perylene	7.0E+06	NA	NLV	NLV	3.50E+08	210 U
Benzo(k)fluoranthene	8.0E+05	NA	NLV	NLV	ID	210 U
bis(2-Chloroethoxy)methane	ID	2.70E+06	NLV	NLV	ID	210 U
bis(2-Chloroethyl)ether	58,000	2.20E+06	44,000	1.30E+04	1.20E+07	100 U
						120 U
						100 U
						110 U
						100 U
						100 U

Table TM 1-5

Semi-Volatile Compounds in Concrete (Industry Criteria)

Spring 2004

Carter Color Coat

Detroit, Michigan

Sample Location:					SWMU1-SB1 (CON)	SWMU1-SB2 (CON)	SWMU1-SB3 (CON)	SWMU1-SB3 (CON)	SWMU1-SB4 (CON)	SWMU1-SB5 (CON)
Sample Date:					4/26/2004	4/26/2004	4/26/2004	4/27/2004	4/26/2004	4/26/2004
MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA										
	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation					
<b>Semi-Volatile Organic Compounds (<math>\mu</math>g/Kg)</b>										
bis(2-Chloroisopropyl)ether						100 U	120 U	100 U	110 U	100 U
bis(2-Ethylhexyl)phthalate	1.0E7 ( C )	1.00E+07	NLV	NLV	8.90E+08	210 U	240 U	210 U	210 U	2,000
Butylbenzylphthalate	3.10E+05 ( C )	3.10E+05	NLV	NLV	2.10E+10	100 U	120 U	100 U	110 U	100 U
Carbazole	2.40E+06	NA	NLV	NLV	ID	340 U	400 U	340 U	350 U	340 U
Chrysene	8.00E+06	NA	ID	ID	ID	100 U	120 U	100 U	110 U	100 U
Dibenz(a,h)anthracene	8,000	NA	NLV	NLV	ID	210 U	240 U	210 U	210 U	210 U
Dibenzofuran	ID	NA	ID	ID	ID	340 U	400 U	340 U	210 U	200 U
Diethylphthalate	7.4E+05 ( C )	7.40E+05	NLV	NLV	1.50E+09	100 U	120 U	100 U	110 U	100 U
Dimethylphthalate	7.90E+05 ( C )	7.90E+05	NLV	NLV	1.50E+09	210 U	240 U	210 U	210 U	210 U
Di-n-butylphthalate	7.60E+05 ( C )	7.60E+05	NLV	NLV	1.50E+09	100 U	120 U	100 U	110 U	100 U
Di-n-octylphthalate	2.00E+07	1.40E+08	NLV	NLV	ID	210 U	240 U	210 U	210 U	210 U
Fluorene	8.70E+07	NA	1.00E+09 ( D )	1.50E+08	4.10E+09	100 U	120 U	100 U	110 U	100 U
Fluoranthene	1.30E+08	NA	1.00E+09 ( D )	8.90E+08	4.10E+09	100 U	120 U	100 U	110 U	100 U
Hexachlorobenzene	37,000	NA	2.20E+05	5.60E+04	ID	210 U	240 U	210 U	210 U	200 U
Hexachlorobutadiene	3.50E+05 ( C )	3.50E+05	3.50E+05 ( C )	4.60E+05	1.80E+08	210 U	240 U	210 U	210 U	200 U
Hexachlorocyclopentadiene	7.20E+05 ( C )	7.20E+05	56,000	60,000	5.90E+06	2,100 U	2,400 U	2,100 U	2,100 U	2,100 U
Hexachloroethane	7.30E+05	NA	79,000	6.60E+05	1.00E+08	100 U	120 U	100 U	110 U	100 U
Indeno(1,2,3-cd)pyrene	80,000	NA	NLV	NLV	ID	210 U	240 U	210 U	210 U	200 U
Isophorone	2.4E+06 ( C )	2.40E+06	NLV	NLV	8.20E+09	100 U	120 U	100 U	110 U	100 U
Naphthalene	5.20E+07	NA	4.70E+05	3.50E+05	8.80E+07	100 U	120 U	100 U	110 U	100 U
Nitrobenzene	3.40E+05	4.90E+05	1.70E+05	64,000	2.10E+07	210 U	240 U	210 U	210 U	200 U
N-Nitrosodimethylamine						340 U	400 U	340 U	350 U	340 U
N-Nitroso-di-n-propylamine	5,400	1.50E+06	NLV	NLV	2.00E+06	210 U	240 U	210 U	210 U	200 U
N-Nitrosodiphenylamine	7.80E+06	NA	NLV	NLV	ID	210 U	240 U	210 U	210 U	200 U
Pentachlorophenol	3.20E+05	NA	NLV	NLV	1.30E+08	3,500 U	4,100 U	3,500 U	3,600 U	3,500 U
Phenanthrene	5.20E+06	NA	5.10E+06	1.90E+05	2.90E+06	100 U	120 U	100 U	110 U	100 U
Phenol	1.2E+07 ( C,DD )	1.20E+07	NLV	NLV	1.80E+10	340 U	400 U	340 U	350 U	340 U
Pyrene	8.40E+07	NA	1.00E+09 ( D )	7.80E+08	2.90E+09	100 U	120 U	100 U	110 U	100 U

**Table TM-1-5**  
**Semi-Volatile Compounds in concrete (Industrial Criteria)**

Spring 2004  
 Carter Color Coat  
 Detroit, Michigan

Sample Location:

Sample Date:

SWMU1:SB6

(CON)

SWMU1:SB7

(CON)

SWMU1:SB8

(CON)

SWMU2:CS1

(CON)

SWMU2:CS2

(CON)

SWMU3:CS1

(CON)

		MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA												
		Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Infinite Source Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation								
<b>Semi-Volatile Organic Compounds:</b>														
	(ug/Kg)													
1,2,4-Trichlorobenzene	1.1E+06 (C,DD)	1.1E+06	1.10E+06 ( C)	3.40E+07	1.10E+10		210 U	210 U	210 U	210 U	360 U	200 U		
1,2-Dichlorobenzene	2.1E+05 ( C)	2.10E+05	2.10E+05 ( C)	4.6E+07 ( C)	4.40E+10		100 U	100 U	100 U	110 U	360 U	100 U		
1,3-Dichlorobenzene	1.7E+05 ( C)	1.70E+05	ID	ID	ID		100 U	100 U	100 U	110 U	360 U	100 U		
1,4-Dichlorobenzene	1.9E+06	NA	1.00E+05	2.60E+05	5.70E+08		100 U	100 U	100 U	110 U	360 U	100 U		
2,4,5-Trichlorophenol	7.30E+07	NA	NLV	NLV	1.00E+10		350 U	340 U	350 U	350 U	360 U	340 U		
2,4,6-Trichlorophenol	3.3E+06	NA	NLV	NLV	1.30E+09		350 U	340 U	350 U	350 U	330 U	340 U		
2,4-Dichlorophenol	1.8E+06 (C,DD)	1.8E+06	NLV	NLV	2.30E+09		350 U	340 U	350 U	350 U	360 U	340 U		
2,4-Dimethylphenol	3.6E+07	NA	NLV	NLV	2.10E+09		350 U	340 U	350 U	350 U	360 U	340 U		
2,4-Dinitrophenol							1,800 U	1,800 U	1,800 U	1,800 U	1,700 U	1,700 U		
2,4-Dinitrotoluene	2.20E+05	NA	NLV	NLV	2.00E+07		350 U	340 U	350 U	350 U	360 U	340 U		
2,6-Dinitrotoluene							350 U	340 U	350 U	350 U	360 U	340 U		
2-Chloronaphthalene	1.80E+08	NA	ID	ID	ID		210 U	210 U	210 U	210 U	360 U	200 U		
2-Chlorophenol	4.50E+06	1.90E+07	ID	ID	ID		350 U, 3	340 U	350 U	350 U	360 U	340 U		
2-Methyl-4,6-dinitrophenol	2.60E+05	NA	NLV	NLV	ID		1,800 U	1,800 U	1,800 U	1,800 U	1,800 U	1,700 U		
2-Methylnaphthalene	2.60E+07	NA	ID	ID	ID		260 U	260 U	260 U	270 U	360 U	250 U		
2-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09		350 U	340 U	350 U	350 U	360 U	340 U		
2-Nitroaniline							1,800 U	1,800 U	1,800 U	1,800 U	1,800 U	1,700 U		
2-Nitrophenol	2.0E+06	NA	NLV	NLV	ID		350 U	340 U	350 U	350 U	360 U	340 U		
3/4-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09		690 U	680 U	690 U	710 U	360 U	670 U		
3-Nitroaniline							1,800 U	1,800 U	1,800 U	1,800 U	1,800 U	1,700 U		
4-Bromophenyl-phenylether							210 U	210 U	210 U	210 U	360 U	200 U		
4-Chloro-3-methylphenol	1.5E+07	NA	NLV	NLV	ID		350 U, 3	340 U	350 U	350 U	360 U	340 U		
4-Chlorophenyl-phenylether							100 U	100 U	100 U	110 U	360 U	100 U		
4-Nitroaniline							1,800 U	1,800 U	1,800 U	1,800 U	1,800 U	1,700 U		
4-Nitrophenol							1,800 U, 3	1,800 U	1,800 U	1,800 U	1,800 U	1,700 U		
Acenaphthene	1.30E+08	NA	3.50E+08	9.70E+07	6.20E+09		100 U	100 U	100 U	110 U	360 U	100 U		
Acenaphthylene	5.2E+06	NA	3.00E+06	2.70E+06	1.00E+09		100 U	100 U	100 U	110 U	360 U	100 U		
Anthracene	7.30E+08	NA	1.00E+09 (D)	1.60E+09	2.90E+10		100 U	100 U	100 U	110 U	360 U	160		
Azobenzene	6.60E+05	NA	3.20E+07	2.10E+06	1.30E+08		210 U	210 U	210 U	210 U	360 U	200 U		
Benzo(a)anthracene	80,000	NA	NLV	NLV	ID		100 U	100 U	100 U	220	80	860		
Benzo(a)pyrene	8,000	NA	NLV	NLV	1.90E+06		210 U	210 U	210 U	210 U	69 U	200 U		
Benzo(b)fluoranthene	80,000	NA	NLV	NLV	ID		210 U	210 U	210 U	210 U	80	2,800		
Benzo(g,h,i)perylene	7.0E+06	NA	NLV	NLV	3.50E+08		210 U	210 U	210 U	210 U	360 U	460		
Benzo(k)fluoranthene	8.0E+05	NA	NLV	NLV	ID		210 U	210 U	210 U	210 U	360 U	890		
bis(2-Chloroethoxy)methane	ID	2.70E+06	NLV	NLV	ID		210 U	210 U	210 U	210 U	360 U	200 U		
bis(2-Chloroethyl)ether	58,000	2.20E+06	44,000	1.30E+04	1.20E+07		100 U	100 U	100 U	110 U	69 U	100 U		

**Table TM-1-5**  
**Semi-Volatile Compounds in Concrete (Industrial Criteria)**

Spring 2004  
 Carter Color Coat  
 Detroit, Michigan

Sample Location:	SWMU1/SB6 (CON)	SWMU1 (SB7(CON))	SWMU1/SB8 (CON)	SWMU2/CS1 (CON)	SWMU2/CS2 (CON)	SWMU3/CS1 (CON)
Sample Date:	4/27/2004	4/27/2004	4/27/2004	4/28/2004	4/28/2004	4/29/2004

MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA						
	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation	
<b>Semi-Volatile Organic Compounds (<math>\mu</math>g/Kg)</b>						
bis(2-Chloroisopropyl)ether						
bis(2-Ethylhexyl)phthalate	1.0E7 (C)	1.00E+07	NLV	NLV	8.90E+08	100 U 210 U <b>3,400</b>
Butylbenzylphthalate	3.10E+05 (C)	3.10E+05	NLV	NLV	2.10E+10	100 U 100 U 100 U
Carbazole	2.40E+06	NA	NLV	NLV	ID	350 U 340 U 350 U
Chrysene	8.00E+06	NA	ID	ID	ID	100 U 100 U 100 U
Dibenzo(a,h)anthracene	8,000	NA	NLV	NLV	ID	210 U 210 U 210 U
Dibenzofuran		ID	NA	ID	ID	350 U 340 U 350 U
Diethylphthalate	7.4E+05 (C)	7.40E+05	NLV	NLV	1.50E+09	100 U 100 U 100 U
Dimethylphthalate	7.90E+05 (C)	7.90E+05	NLV	NLV	1.50E+09	210 U 210 U 210 U
Di-n-butylphthalate	7.60E+05 (C)	7.60E+05	NLV	NLV	1.50E+09	100 U 100 U 100 U
Di-n-octylphthalate	2.00E+07	1.40E+08	NLV	NLV	ID	210 U 210 U 210 U
Fluorene	8.70E+07	NA	1.00E+09 (D)	1.50E+08	4.10E+09	100 U 100 U 100 U
Fluoranthene	1.30E+08	NA	1.00E+09 (D)	8.90E+08	4.10E+09	100 U 100 U <b>3,900</b>
Hexachlorobenzene	37,000	NA	2.20E+05	5.60E+04	ID	210 U 210 U 210 U
Hexachlorobutadiene	3.50E+05 (C)	3.50E+05	3.50E+05 (C)	4.60E+05	1.80E+08	210 U 210 U 210 U
Hexachlorocyclopentadiene	7.20E+05 (C)	7.20E+05	56,000	60,000	5.90E+06	2,100 U 2,100 U 2,100 U
Hexachloroethane	7.30E+05	NA	79,000	6.60E+05	1.00E+08	100 U 100 U 100 U
Indeno(1,2,3-cd)pyrene	80,000	NA	NLV	NLV	ID	210 U 210 U 210 U
Isophorone	2.4E+06 (C)	2.40E+06	NLV	NLV	8.20E+09	100 U 100 U 100 U
Naphthalene	5.20E+07	NA	4.70E+05	3.50E+05	8.80E+07	<b>420</b> M 100 U 100 U
Nitrobenzene	3.40E+05	4.90E+05	1.70E+05	64,000	2.10E+07	210 U 210 U 210 U
N-Nitrosodimethylamine						350 U 340 U 350 U
N-Nitroso-di-n-propylamine	5,400	1.50E+06	NLV	NLV	2.00E+06	210 U 210 U 210 U
N-Nitrosodiphenylamine	7.80E+06	NA	NLV	NLV	ID	210 U 210 U 210 U
Pentachlorophenol	3.20E+05	NA	NLV	NLV	1.30E+08	3,600 U 3,500 U 3,600 U
Phenanthrene	5.20E+06	NA	5.10E+06	1.90E+05	2.90E+06	100 U 100 U 100 U
Phenol	1.2E+07 (C,DD)	1.20E+07	NLV	NLV	1.80E+10	350 U 350 U 350 U
Pyrene	8.40E+07	NA	1.00E+09 (D)	7.80E+08	2.90E+09	100 U 100 U <b>3,200</b>
						720 720 <b>2,200</b>

**Table TM-1-5**  
**Semi-Volatile Compounds in Concrete**  
**Spring 2004**  
**Carter Color Coat**  
**Detroit, Michigan**

**Sample Location:** SWMU4 CS1 (CON) SWMU5 CS1 (CON) SWMU5 CS1 (CON) SWMU5 CS2 (CON) SWMU5 CS2 (CON) SWMU5 CS3 (CON)  
**Sample Date:** 4/28/2004 4/28/2004 4/29/2004 4/28/2004 DUPLICATE 4/29/2004 DUPLICATE 4/29/2004

	MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA											
	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation							
<b>Semi-Volatile Organic Compounds (ug/Kg)</b>												
1,2,4-Trichlorobenzene	1.1E+06 (C,DD)	1.1E+06	1.10E+06 (C)	3.40E+07	1.10E+10	360 U	210 U	210 U	870 U	210 U	250 U	
1,2-Dichlorobenzene	2.1E+05 (C)	2.10E+05	2.10E+05 (C)	4.6E+07 (C)	4.40E+10	360 U	100 U	100 U	870 U	100 U	120 U	
1,3-Dichlorobenzene	1.7E+05 (C)	1.70E+05	ID	ID	ID	360 U	100 U	100 U	870 U	100 U	120 U	
1,4-Dichlorobenzene	1.9E+06	NA	1.00E+05	2.60E+05	5.70E+08	360 U	100 U	100 U	870 U	100 U	120 U	
2,4,5-Trichlorophenol	7.30E+07	NA	NLV	NLV	1.00E+10	360 U	340 U	340 U	870 U	340 U	410 U	
2,4,6-Trichlorophenol	3.3E+06	NA	NLV	NLV	1.30E+09	330 U	340 U	340 U	330 U	340 U	410 U	
2,4-Dichlorophenol	1.8E+06 (C,DD)	1.8E+06	NLV	NLV	2.30E+09	360 U	340 U	340 U	870 U	340 U	410 U	
2,4-Dimethylphenol	3.6E+07	NA	NLV	NLV	2.10E+09	360 U	340 U	340 U	870 U	340 U	410 U	
2,4-Dinitrophenol						1,700 U	1,800 U	1,800 U	3,400 U	1,800 U	2,100 U	
2,4-Dinitrotoluene	2.20E+05	NA	NLV	NLV	2.00E+07	360 U	340 U	340 U	870 U	340 U	410 U	
2,6-Dinitrotoluene						360 U	340 U	340 U	870 U	340 U	410 U	
2-Chloronaphthalene	1.80E+08	NA	ID	ID	ID	360 U	210 U	210 U	870 U	210 U	250 U	
2-Chlorophenol	4.50E+06	1.90E+07	ID	ID	ID	360 U	340 U	340 U	870 U	340 U	410 U	
2-Methyl-4,6-dinitrophenol	2.60E+05	NA	NLV	NLV	ID	360 U	1,800 U	1,800 U	870 U	1,800 U	2,100 U	
2-Methylnaphthalene	2.60E+07	NA	ID	ID	ID	360 U	260 U	260 U	870 U	260 U	310 U	
2-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	360 U	340 U	340 U	870 U	340 U	410 U	
2-Nitroaniline						360 U	1,800 U	1,800 U	870 U	1,800 U	2,100 U	
2-Nitrophenol	2.0E+06	NA	NLV	NLV	ID	360 U	340 U	340 U	870 U	340 U	410 U	
3/4-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	360 U	690 U	680 U	870 U	680 U	820 U	
3-Nitroaniline						360 U	1,800 U	1,800 U	870 U	1,800 U	2,100 U	
4-Bromophenyl-phenylether						360 U	210 U	210 U	870 U	210 U	250 U	
4-Chloro-3-methylphenol						360 U	340 U	340 U	870 U	340 U	410 U	
4-Chlorophenyl-phenylether	1.5E+07	NA	NLV	NLV	ID	360 U	100 U	100 U	870 U	100 U	120 U	
4-Nitroaniline						360 U	1,800 U	1,800 U	870 U	1,800 U	2,100 U	
4-Nitrophenol						1,700 U	1,800 U	1,800 U	3,400 U	1,800 U	2,100 U	
Acenaphthene	1.30E+08	NA	3.50E+08	9.70E+07	6.20E+09	360 U	100 U	100 U	870 U	100 U	120 U	
Acenaphthylene	5.2E+06	NA	3.00E+06	2.70E+06	1.00E+09	360 U	100 U	100 U	870 U	100 U	120 U	
Anthracene	7.30E+08	NA	1.00E+09 (D)	1.60E+09	2.90E+10	360 U	160	100 U	870 U	100 U	120 U	
Azobenzene	6.60E+05	NA	3.20E+07	2.10E+06	1.30E+08	360 U	210 U	210 U	870 U	210 U	250 U	
Benzo(a)anthracene	80,000	NA	NLV	NLV	ID	69 U	100 U	410	170 U	100 U	210	
Benzo(a)pyrene	8,000	NA	NLV	NLV	1.90E+06	69 U	300	270	170 U	210 U	250 U	
Benzo(b)fluoranthene	80,000	NA	NLV	NLV	ID	69 U	710	440	170 U	280	380	
Benzo(g,h,i)perylene	7.0E+06	NA	NLV	NLV	3.50E+08	360 U	210 U	210 U	870 U	210 U	250 U	
Benzo(k)fluoranthene	8.0E+05	NA	NLV	NLV	ID	360 U	280	210 U	870 U	210 U	250 U	
bis(2-Chloroethoxy)methane	ID	2.70E+06	NLV	NLV	ID	360 U	210 U	210 U	870 U	210 U	250 U	
bis(2-Chloropropyl)ether	58,000	2.20E+06	44,000	1.30E+04	1.20E+07	69 U	100 U	100 U	170 U	100 U	120 U	

Table TM-1-5  
Semi-Volatile Compounds in Concrete (Industrial Criteria)

Spring 2004  
Carter Color Coat  
Detroit, Michigan

Sample Location:					SWMU4 CS1 (CON)	SWMU5 CS1 (CON)	SWMU5 CS1 (CON)	SWMU5 CS2 (CON)	SWMU5 CS2 (CON)	SWMU5 CS3 (CON)	
Sample Date:					4/28/2004	4/28/2004	4/29/2004	4/28/2004	4/29/2004	4/29/2004	
MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA											
	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation						
<b>Semi-Volatile Organic Compounds (<math>\mu\text{g/Kg}</math>)</b>											
bis(2-Chloroisopropyl)ether						360 U	100 U	100 U	870 U	100 U	120 U
bis(2-Ethylhexyl)phthalate	1.0E7 ( C )	1.00E+07	NLV	NLV	8.90E+08	360 U	400	210 U	870 U	330	640
Butylbenzylphthalate	3.10E+05 ( C )	3.10E+05	NLV	NLV	2.10E+10	360 U	100 U	100 U	870 U	150	120 U
Carbazole	2.40E+06	NA	NLV	NLV	ID	360 U	340 U	340 U	870 U	340 U	410 U
Chrysene	8.00E+06	NA	ID	ID	ID	360 U	520	670	870 U	410	430
Dibenzo(a,h)anthracene	8,000	NA	NLV	NLV	ID	69 U	210 U	210 U	170 U	210 U	250 U
Dibenzofuran	ID	NA	ID	ID	ID	360 U	340 U	340 U	870 U	340 U	410 U
Diethylphthalate	7.4E+05 ( C )	7.40E+05	NLV	NLV	1.50E+09	360 U	100 U	100 U	870 U	100 U	350
Dimethylphthalate	7.90E+05 ( C )	7.90E+05	NLV	NLV	1.50E+09	360 U	210 U	210 U	870 U	210 U	250 U
Di-n-butylphthalate	7.60E+05 ( C )	7.60E+05	NLV	NLV	1.50E+09	360 U	100 U	100 U	870 U	100 U	120 U
Di-n-octylphthalate	2.00E+07	1.40E+08	NLV	NLV	ID	360 U	210 U	210 U	870 U	210 U	250 U
Fluorene	8.70E+07	NA	1.00E+09 ( D )	1.50E+08	4.10E+09	360 U	100 U	100 U	870 U	100 U	120 U
Fluoranthene	1.30E+08	NA	1.00E+09 ( D )	8.90E+08	4.10E+09	360 U	1,900	1,700	870 U	820	750
Hexachlorobenzene	37,000	NA	2.20E+05	5.60E+04	ID	360 U	210 U	210 U	870 U	210 U	250 U
Hexachlorobutadiene	3.50E+05 ( C )	3.50E+05	3.50E+05 ( C )	4.60E+05	1.80E+08	360 U	210 U	210 U	870 U	210 U	250 U
Hexachlorocyclopentadiene	7.20E+05 ( C )	7.20E+05	56,000	60,000	5.90E+06	360 U	2,100 U	2,100 U	870 U	2,100 U	2,500 U
Hexachloroethane	7.30E+05	NA	79,000	6.60E+05	1.00E+08	360 U	100 U	100 U	870 U	100 U	120 U
Indeno(1,2,3-cd)pyrene	80,000	NA	NLV	NLV	ID	69 U	210 U	210 U	170 U	210 U	250 U
Isophorone	2.4E+06 ( C )	2.40E+06	NLV	NLV	8.20E+09	360 U	100 U	100 U	870 U	100 U	120 U
Naphthalene	5.20E+07	NA	4.70E+05	3.50E+05	8.80E+07	360 U	290	100 U	870 U	130	120 U
Nitrobenzene	3.40E+05	4.90E+05	1.70E+05	64,000	2.10E+07	69 U	210 U	210 U	170 U	210 U	250 U
N-Nitrosodimethylamine						360 U	340 U	340 U	870 U	340 U	410 U
N-Nitroso-di-n-propylamine	5,400	1.50E+06	NLV	NLV	2.00E+06	360 U	210 U	210 U	870 U	210 U	250 U
N-Nitrosodiphenylamine	7.80E+06	NA	NLV	NLV	ID	360 U	210 U	210 U	870 U	210 U	250 U
Pentachlorophenol	3.20E+05	NA	NLV	NLV	1.30E+08	360 U	3,500 U	3,500 U	870 U	3,500 U	4,200 U
Phenanthrene	5.20E+06	NA	5.10E+06	1.90E+05	2.90E+06	390	1,200	920	870 U	500	450
Phenol	1.2E+07 ( C,DD )	1.20E+07	NLV	NLV	1.80E+10	360 U	340 U	340 U	870 U	340 U	410 U
Pyrene	8.40E+07	NA	1.00E+09 ( D )	7.80E+08	2.90E+09	360 U	850	1,200	870 U	700	470

**Table I.M.1-5**  
**Semi-Volatile Compounds in Concrete (Industrial Criteria)**  
**Spring 2004**  
**Carter Color Coat**  
**Detroit, Michigan**

Sample Location:					SWMU5 CS3 (CON) 4/29/2004	SWMU6 CS1 (CON) 4/28/2004	SWMU6 CS2 (CON) 4/28/2004	F1 CS1 (CON) 4/28/2004	F1 CS2 (CON) 4/28/2004	F1 CS3 (CON) 4/28/2004
Sample Date:										
DUPLICATE										
<b>MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA</b>										
<b>Semi-Volatile Organic Compounds (<math>\mu\text{g}/\text{Kg}</math>)</b>										
1,2,4-Trichlorobenzene	1.1E+06 (C,DD)	1.1E+06	1.10E+06 ( C)	3.40E+07	1.10E+10	210 U	880 U	360 U	5,500 U	3,700 U
1,2-Dichlorobenzene	2.1E+05 ( C)	2.10E+05	2.10E+05 ( C)	4.6E+07 ( C)	4.40E+10	100 U	880 U	360 U	2,700 U	3,700 U
1,3-Dichlorobenzene	1.7E+05 ( C)	1.70E+05	ID	ID	ID	100 U	880 U	360 U	2,700 U	3,700 U
1,4-Dichlorobenzene	1.9E+06	NA	1.00E+05	2.60E+05	5.70E+08	100 U	880 U	360 U	2,700 U	3,700 U
2,4,5-Trichlorophenol	7.30E+07	NA	NLV	NLV	1.00E+10	350 U	880 U	360 U	9,000 U	3,700 U
2,4,6-Trichlorophenol	3.3E+06	NA	NLV	NLV	1.30E+09	350 U	330 U	330 U	9,000 U	730 U
2,4-Dichlorophenol	1.8E+06 (C,DD)	1.8E+06	NLV	NLV	2.30E+09	350 U	880 U	360 U	9,000 U	3,700 U
2,4-Dimethylphenol	3.6E+07	NA	NLV	NLV	2.10E+09	350 U	880 U	360 U	9,000 U	3,700 U
2,4-Dinitrophenol						1,800 U	3,500 U	1,700 U	47,000 U	15,000 U
2,4-Dinitrotoluene	2.20E+05	NA	NLV	NLV	2.00E+07	350 U	880 U	360 U	9,000 U	3,700 U
2,6-Dinitrotoluene						350 U	880 U	360 U	9,000 U	3,700 U
2-Chloronaphthalene	1.80E+08	NA	ID	ID	ID	210 U	880 U	360 U	5,500 U	3,700 U
2-Chlorophenol	4.50E+06	1.90E+07	ID	ID	ID	350 U	880 U	360 U	9,000 U	3,700 U
2-Methyl-4,6-dinitrophenol	2.60E+05	NA	NLV	NLV	ID	1,800 U	880 U	360 U	47,000 U	3,700 U
2-Methylnaphthalene	2.60E+07	NA	ID	ID	ID	260 U	880 U	360 U	20,000	3,700 U
2-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	350 U	880 U	360 U	9,000 U	3,700 U
2-Nitroaniline						1,800 U	880 U	360 U	47,000 U	3,700 U
2-Nitrophenol	2.0E+06	NA	NLV	NLV	ID	350 U	880 U	360 U	9,000 U	3,700 U
3/4-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	690 U	880 U	360 U	18,000 U	3,700 U
3-Nitroaniline						1,800 U	880 U	360 U	47,000 U	3,700 U
4-Bromophenyl-phenylether						210 U	880 U	360 U	5,500 U	3,700 U
4-Chloro-3-methylphenol	1.5E+07	NA	NLV	NLV	ID	350 U	880 U	360 U	9,000 U	3,700 U
4-Chlorophenyl-phenylether						100 U	880 U	360 U	2,700 U	3,700 U
4-Nitroaniline						1,800 U	880 U	360 U	47,000 U	3,700 U
4-Nitrophenol						1,800 U	3,500 U	1,700 U	47,000 U	15,000 U
Acenaphthene	1.30E+08	NA	3.50E+08	9.70E+07	6.20E+09	100 U	880 U	360 U	26,000	3,900
Acenaphthylene	5.2E+06	NA	3.00E+06	2.70E+06	1.00E+09	100 U	880 U	360 U	2,700 U	3,700 U
Anthracene	7.30E+08	NA	1.00E+09 (D)	1.60E+09	2.90E+10	150	880 U	360 U	69,000	11,000
Azobenzene	6.60E+05	NA	3.20E+07	2.10E+06	1.30E+08	210 U	880 U	360 U	5,500 U	3,700 U
Benzo(a)anthracene	80,000	NA	NLV	NLV	ID	500	950	69 U	170,000	46,000
Benzo(a)pyrene	8,000	NA	NLV	NLV	1.90E+06	460	1,100	69 U	160,000	45,000
Benzo(b)fluoranthene	80,000	NA	NLV	NLV	ID	690	1,700	69 U	200,000	85,000
Benzo(g,h,i)perylene	7.0E+06	NA	NLV	NLV	3.50E+08	250	880 U	360 U	96,000	1,800
Benzo(k)fluoranthene	8.0E+05	NA	NLV	NLV	ID	240	880 U	360 U	59,000	30,000
bis(2-Chloroethoxy)methane	ID	2.70E+06	NLV	NLV	ID	210 U	880 U	360 U	5,500 U	3,700 U
bis(2-Chloroethyl)ether	58,000	2.20E+06	44,000	1.30E+04	1.20E+07	100 U	170 U	69 U	2,700 U	730 U

Sample Location:

Sample Date:

SWMU5 CS3 (CON) 4/29/2004	SWMU6 CS1 (CON) 4/28/2004	SWMU6 CS2 (CON) 4/28/2004	F1 CS1 (CON) 4/28/2004	F1 CS2 (CON) 4/28/2004	F1 CS3 (CON) 4/28/2004
DUPLICATE					

MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA					
	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Infinite Source Volatilization to Indoor Air	Particulate Volatile Soil Inhalation	
<b>Semi-Volatile Organic Compounds</b> <b>(ug/Kg)</b>					
bis(2-Chloroisopropyl)ether					
bis(2-Ethylhexyl)phthalate	1.0E7 ( C )	1.00E+07	NLV	NLV	8.90E+08
Butylbenzylphthalate	3.10E+05 ( C )	3.10E+05	NLV	NLV	2.10E+10
Carbazole	2.40E+06	NA	NLV	NLV	ID
Chrysene	8.00E+06	NA	ID	ID	ID
Dibenz(a,h)anthracene	8,000	NA	NLV	NLV	ID
Dibenzo furan	ID	NA	ID	ID	ID
Diethylphthalate	7.4E+05 ( C )	7.40E+05	NLV	NLV	1.50E+09
Dimethylphthalate	7.90E+05 ( C )	7.90E+05	NLV	NLV	1.50E+09
Di-n-butylphthalate	7.60E+05 ( C )	7.60E+05	NLV	NLV	1.50E+09
Di-n-octylphthalate	2.00E+07	1.40E+08	NLV	NLV	ID
Fluorene	8.70E+07	NA	1.00E+09 ( D )	1.50E+08	4.10E+09
Fluoranthene	1.30E+08	NA	1.00E+09 ( D )	8.90E+08	4.10E+09
Hexachlorobenzene	37,000	NA	2.20E+05	5.60E+04	ID
Hexachlorobutadiene	3.50E+05 ( C )	3.50E+05	3.50E+05 ( C )	4.60E+05	1.80E+08
Hexachlorocyclopentadiene	7.20E+05 ( C )	7.20E+05	56,000	60,000	5.90E+06
Hexachloroethane	7.30E+05	NA	79,000	6.60E+05	1.00E+08
Indeno(1,2,3-cd)pyrene	80,000	NA	NLV	NLV	ID
Isophorone	2.4E+06 ( C )	2.40E+06	NLV	NLV	8.20E+09
Naphthalene	5.20E+07	NA	4.70E+05	3.50E+05	8.80E+07
Nitrobenzene	3.40E+05	4.90E+05	1.70E+05	64,000	2.10E+07
N-Nitrosodimethylamine					
N-Nitroso-di-n-propylamine	5,400	1.50E+06	NLV	NLV	2.00E+06
N-Nitrosodiphenylamine	7.80E+06	NA	NLV	NLV	ID
Pentachlorophenol	3.20E+05	NA	NLV	NLV	1.30E+08
Phenanthrene	5.20E+06	NA	5.10E+06	1.90E+05	2.90E+06
Phenol	1.2E+07 ( C,DD )	1.20E+07	NLV	NLV	1.80E+10
Pyrene	8.40E+07	NA	1.00E+09 ( D )	7.80E+08	2.90E+09

**Table TM-1-5**  
**Semi-Volatile Compounds in Concrete (Industrial Criteria)**  
**Spring 2004**  
**Carter Color Coat**  
**Detroit, Michigan**

Sample Location:	F2 CS1 (CON)	F2 CS2 (CON)	F2 CS3 (CON)	F3 CS 1 (CON)	F3 CS 2 (CON)	F3 CS 3 (CON)
Sample Date:	4/28/2004	4/28/2004	4/28/2004	4/27/2004	4/27/2004	4/27/2004
MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA						
	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Infinite Source Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation	
<b>Semi-Volatile Organic Compounds</b> <b>(<math>\mu\text{g/Kg}</math>)</b>						
1,2,4-Trichlorobenzene	1.1E+06 (C,DD)	1.1E+06	1.10E+06 ( C)	3.40E+07	1.10E+10	2,100 U    19,000 U    210 U    210 U    2,200 U    220 U
1,2-Dichlorobenzene	2.1E+05 ( C)	2.10E+05	2.10E+05 ( C)	4.6+07 ( C)	4.40E+10	1,100 U    19,000 U    110 U    110 U    1,100 U    110 U
1,3-Dichlorobenzene	1.7E+05 ( C)	1.70E+05	ID	ID	ID	1,100 U    19,000 U    110 U    110 U    1,100 U    110 U
1,4-Dichlorobenzene	1.9E+06	NA	1.00E+05	2.60E+05	5.70E+08	1,100 U    19,000 U    110 U    110 U    1,100 U    110 U
2,4,5-Trichlorophenol	7.30E+07	NA	NLV	NLV	1.00E+10	3,500 U    19,000 U    350 U    350 U    3,600 U    360 U
2,4,6-Trichlorophenol	3.3E+06	NA	NLV	NLV	1.30E+09	3,500 U    3,600 U    350 U    350 U    3,600 U    360 U
2,4-Dichlorophenol	1.8E+06 (C,DD)	1.8E+06	NLV	NLV	2.30E+09	3,500 U    19,000 U    350 U    350 U    3,600 U    360 U
2,4-Dimethylphenol	3.6E+07	NA	NLV	NLV	2.10E+09	3,500 U    19,000 U    350 U    350 U    3,600 U    360 U
2,4-Dinitrophenol						18,000 U    73,000 U    1,800 U    1,800 U    19,000 U    1,800 U
2,4-Dinitrotoluene	2.20E+05	NA	NLV	NLV	2.00E+07	3,500 U    19,000 U    350 U    350 U    3,600 U    360 U
2,6-Dinitrotoluene						3,500 U    19,000 U    350 U    350 U    3,600 U    360 U
2-Chloronaphthalene	1.80E+08	NA	ID	ID	ID	2,100 U    19,000 U    210 U    210 U    2,200 U    220 U
2-Chlorophenol	4.50E+06	1.90E+07	ID	ID	ID	3,500 U    19,000 U    350 U    350 U    3,600 U    360 U
2-Methyl-4,6-dinitrophenol	2.60E+05	NA	NLV	NLV	ID	18,000 U    19,000 U    1,800 U    1,800 U    19,000 U    1,800 U
2-Methylnaphthalene	2.60E+07	NA	ID	ID	ID	15,000    19,000 U    520    5,400    2,700 U    500
2-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	3,500 U    19,000 U    350 U    350 U    3,600 U    360 U
2-Nitroaniline						18,000 U    19,000 U    1,800 U    1,800 U    19,000 U    1,800 U
2-Nitrophenol	2.0E+06	NA	NLV	NLV	ID	3,500 U    19,000 U    350 U    350 U    3,600 U    360 U
3-/4-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	7,000 U    19,000 U    690 U    710 U    7,300 U    720 U
3-Nitroaniline						18,000 U    19,000 U    1,800 U    1,800 U    19,000 U    1,800 U
4-Bromophenyl-phenylether						2,100 U    19,000 U    210 U    210 U    2,200 U    220 U
4-Chloro-3-methylphenol	1.5E+07	NA	NLV	NLV	ID	3,500 U    19,000 U    350 U    350 U    3,600 U    360 U
4-Chlorophenyl-phenylether						1,100 U    19,000 U    110 U    110 U    1,100 U    110 U
4-Nitroaniline						18,000 U    19,000 U    1,800 U    1,800 U    19,000 U    1,800 U
4-Nitrophenol						18,000 U    73,000 U    1,800 U    1,800 U    19,000 U    1,800 U
Acenaphthene	1.30E+08	NA	3.50E+08	9.70E+07	6.20E+09	58,000    19,000 U    630    4,000    2,700    480
Acenaphthylene	5.2E+06	NA	3.00E+06	2.70E+06	1.00E+09	1,100 U    19,000 U    110 U    110 U    1,100 U    110 U
Anthracene	7.30E+08	NA	1.00E+09 (D)	1.60E+09	2.90E+10	16,000    26,000    1,600    6,100    10,000    1,200
Azobenzene	6.60E+05	NA	3.20E+07	2.10E+06	1.30E+08	2,100 U    19,000 U    210 U    210 U    2,200 U    220 U
Benzo(a)anthracene	80,000	NA	NLV	NLV	ID	39,000    120,000    6,100    8,200    41,000    5,600
Benzo(a)pyrene	8,000	NA	NLV	NLV	1.90E+06	19,000    94,000    5,100    3,800    24,000    3,600
Benzo(b)fluoranthene	80,000	NA	NLV	NLV	ID	35,000    160,000    5,900    6,700    33,000    5,100
Benzo(g,h,i)perylene	7.0E+06	NA	NLV	NLV	3.50E+08	9,400    26,000    2,600    2,600    14,000    1,800
Benzo(k)fluoranthene	8.0E+05	NA	NLV	NLV	ID	10,000    68,000    2,400    2,100    13,000    1,800
bis(2-Chloroethoxy)methane	ID	2.70E+06	NLV	NLV	ID	2,100 U    19,000 U    210 U    210 U    2,200 U    220 U
bis(2-Chloroethyl)ether	58,000	2.20E+06	44,000	1.30E+04	1.20E+07	1,100 U    3,600 U    110 U    110 U    1,100 U    110 U

Table TM-1-5  
Semivolatile Compounds in Concrete (Industrial Criteria)  
Spring 2004  
Carter Color Coat  
Detroit, Michigan

Sample Location:					F2,CS1 (CON)	F2,CS2 (CON)	F2,CS3 (CON)	F3,CS-1 (CON)	F3,CS-2 (CON)	F3,CS-3 (CON)
Sample Date:					4/28/2004	4/28/2004	4/28/2004	4/27/2004	4/27/2004	4/27/2004
MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA										
	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation					
Semi-Volatile Organic Compounds ( $\mu\text{g}/\text{Kg}$ )										
bis(2-Chloroisopropyl)ether						1,100 U	19,000 U	110 U	110 U	1,100 U
bis(2-Ethylhexyl)phthalate	1.0E7 ( C )	1.00E+07	NLV	NLV	8.90E+08	2,100 U	19,000 U	210 U	580	2,200 U
Butylbenzylphthalate	3.10E+05 ( C )	3.10E+05	NLV	NLV	2.10E+10	1,100 U	19,000 U	110 U	210	1,100 U
Carbazole	2.40E+06	NA	NLV	NLV	ID	3,500 U	23,000	1,700	3,500	7,600
Chrysene	8.00E+06	NA	ID	ID	ID	38,000	140,000	7,200	8,600	42,000
Dibenzo(a,h)anthracene	8,000	NA	NLV	NLV	ID	2,100 U	11,000	210 U	1,000	2,200 U
Dibenzofuran	ID	NA	ID	ID	ID	39,000	19,000 U	1,200	9,900	4,600
Diethylphthalate	7.4E+05 ( C )	7.40E+05	NLV	NLV	1.50E+09	1,100 U	19,000 U	110 U	1,100 U	110 U
Dimethylphthalate	7.90E+05 ( C )	7.90E+05	NLV	NLV	1.50E+09	2,100 U	19,000 U	210 U	210 U	2,200 U
Di-n-butylphthalate	7.60E+05 ( C )	7.60E+05	NLV	NLV	1.50E+09	1,100 U	19,000 U	110 U	180	1,100 U
Di-n-octylphthalate	2.00E+07	1.40E+08	NLV	NLV	ID	2,100 U	19,000 U	210 U	210 U	2,200 U
Fluorene	8.70E+07	NA	1.00E+09 ( D )	1.50E+08	4.10E+09	29,000	19,000 U	250	5,200	1,900
Fluoranthene	1.30E+08	NA	1.00E+09 ( D )	8.90E+08	4.10E+09	160,000	300,000	18,000	42,000	110,000
Hexachlorobenzene	37,000	NA	2.20E+05	5.60E+04	ID	2,100 U	19,000 U	210 U	210 U	2,200 U
Hexachlorobutadiene	3.50E+05 ( C )	3.50E+05	3.50E+05 ( C )	4.60E+05	1.80E+08	2,100 U	19,000 U	210 U	210 U	2,200 U
Hexachlorocyclopentadiene	7.20E+05 ( C )	7.20E+05	56,000	60,000	5.90E+06	21,000 U	19,000 U	2,100 U	2,100 U	22,000 U
Hexachloroethane	7.30E+05	NA	79,000	6.60E+05	1.00E+08	1,100 U	19,000 U	110 U	110 U	1,100 U
Indeno(1,2,3-cd)pyrene	80,000	NA	NLV	NLV	ID	11,000	36,000	2,600	2,900	15,000
Iso phorone	2.4E+06 ( C )	2.40E+06	NLV	NLV	8.20E+09	1,100 U	19,000 U	110 U	110 U	1,100 U
Naphthalene	5.20E+07	NA	4.70E+05	3.50E+05	8.80E+07	6,800	19,000 U	520	5,300	1,100 U
Nitrobenzene	3.40E+05	4.90E+05	1.70E+05	64,000	2.10E+07	2,100 U	3,600 U	210 U	210 U	2,200 U
N-Nitrosodimethylamine						3,500 U	19,000 U	350 U	350 U	3,600 U
N-Nitroso-di-n-propylamine	5,400	1.50E+06	NLV	NLV	2.00E+06	2,100 U	19,000 U	210 U	210 U	2,200 U
N-Nitrosodiphenylamine	7.80E+06	NA	NLV	NLV	ID	2,100 U	19,000 U	210 U	660	2,200 U
Pentachlorophenol	3.20E+05	NA	NLV	NLV	1.30E+08	36,000 U	19,000 U	3,600 U	3,600 U	22,000 U
Phenanthrene	5.20E+06	NA	5.10E+06	1.90E+05	2.90E+06	110,000	130,000	11,000	60,000	67,000
Phenol	1.2E+07 ( C,DD )	1.20E+07	NLV	NLV	1.80E+10	3,500 U	19,000 U	350 U	350 U	3,600 U
Pyrene	8.40E+07	NA	1.00E+09 ( D )	7.80E+08	2.90E+09	140,000	230,000	11,000	24,000	65,000
										8,400

**Table TM-1-5**  
**Semi-Volatile Compounds in Concrete (Industrial Criteria)**  
**Spring 2004**

Carter Color Coat  
Detroit, Michigan

Sample Location:	F4 CS 1 (CON)	F4 CS 2 (CON)	F4 CS 3 (CON)	F5 CS 1 (CON)	F5 CS 2 (CON)	F5 CS 3 (CON)
Sample Date:	4/27/2004	4/27/2004	4/27/2004	4/27/2004	4/27/2004	4/27/2004

MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA											
	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Infinite Source Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation						
<b>Semi-Volatile Organic Compounds (<math>\mu\text{g/Kg}</math>)</b>											
1,2,4-Trichlorobenzene	1.1E+06 (C,DD)	1.1E+06	1.10E+06 ( C)	3.40E+07	1.10E+10	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
1,2-Dichlorobenzene	2.1E+05 ( C)	2.10E+05	2.10E+05 ( C)	4.6E+07 ( C)	4.40E+10	1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U
1,3-Dichlorobenzene	1.7E+05 ( C)	1.70E+05	ID	ID	ID	1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U
1,4-Dichlorobenzene	1.9E+06	NA	1.00E+05	2.60E+05	5.70E+08	1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U
2,4,5-Trichlorophenol	7.30E+07	NA	NLV	NLV	1.00E+10	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
2,4,6-Trichlorophenol	3.3E+06	NA	NLV	NLV	1.30E+09	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
2,4-Dichlorophenol	1.8E+06 (C,DD)	1.8E+06	NLV	NLV	2.30E+09	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
2,4-Dimethylphenol	3.6E+07	NA	NLV	NLV	2.10E+09	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
2,4-Dinitrophenol						18,000 U	190,000 U	92,000 U	18,000 U	18,000 U	1,800 U
2,4-Dinitrotoluene	2.20E+05	NA	NLV	NLV	2.00E+07	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
2,6-Dinitrotoluene						3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
2-Chloronaphthalene	1.80E+08	NA	ID	ID	ID	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
2-Chlorophenol	4.50E+06	1.90E+07	ID	ID	ID	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
2-Methyl-4,6-dinitrophenol	2.60E+05	NA	NLV	NLV	ID	18,000 U	190,000 U	92,000 U	18,000 U	18,000 U	1,800 U
2-Methylnaphthalene	2.60E+07	NA	ID	ID	ID	3,400	28,000 U	25,000	6,600	2,700 U	1,500
2-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
2-Nitroaniline						18,000 U	190,000 U	92,000 U	18,000 U	18,000 U	1,800 U
2-Nitrophenol	2.0E+06	NA	NLV	NLV	ID	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
3/4-Methylphenol	3.60E+07	NA	NLV	NLV	2.90E+09	7,100 U	73,000 U	36,000 U	7,100 U	7,100 U	720 U
3-Nitroaniline						18,000 U	190,000 U	92,000 U	18,000 U	18,000 U	1,800 U
4-Bromophenyl-phenylether						2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
4-Chloro-3-methylphenol	1.5E+07	NA	NLV	NLV	ID	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
4-Chlorophenyl-phenylether						1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U
4-Nitroaniline						18,000 U	190,000 U	92,000 U	18,000 U	18,000 U	1,800 U
4-Nitrophenol						18,000 U	190,000 U	92,000 U	18,000 U	18,000 U	1,800 U
Acenaphthene	1.30E+08	NA	3.50E+08	9.70E+07	6.20E+09	5,400	11,000 U	150,000	26,000	4,300	340
Acenaphthylene	5.2E+06	NA	3.00E+06	2.70E+06	1.00E+09	1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U
Anthracene	7.30E+08	NA	1.00E+09 (D)	1.60E+09	2.90E+10	17,000	27,000	220,000	44,000	4,900	700
Azobenzene	6.60E+05	NA	3.20E+07	2.10E+06	1.30E+08	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
Benzo(a)anthracene	80,000	NA	NLV	NLV	ID	63,000	76,000	400,000	81,000	7,100	2,700
Benzo(a)pyrene	8,000	NA	NLV	NLV	1.90E+06	37,000	48,000	350,000	60,000	2,200 U	1,800
Benzo(b)fluoranthene	80,000	NA	NLV	NLV	ID	60,000	82,000	400,000	93,000	7,200	3,700
Benzo(g,h,i)perylene	7.0E+06	NA	NLV	NLV	3.50E+08	27,000	30,000	190,000	40,000	3,400	220 U
Benzo(k)fluoranthene	8.0E+05	NA	NLV	NLV	ID	22,000	30,000	140,000	38,000	2,400	220 U
bis(2-Chloroethoxy)methane	ID	2.70E+06	NLV	NLV	ID	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
bis(2-Chloroethyl)ether	58,000	2.20E+06	44,000	1.30E+04	1.20E+07	1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U

Sample Location:

Sample Date:

F4 CS 1  
(CON)

4/27/2004

F4 CS 2  
(CON)

4/27/2004

F4 CS 3  
(CON)

4/27/2004

F5 CS 1  
(CON)

4/27/2004

F5 CS 2  
(CON)

4/27/2004

F5 CS 3  
(CON)

4/27/2004

## MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA

	Direct Contact Industrial & Commercial II	Soil Saturation Concentration Screening	Infinite Source Volatile to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation	
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**Semi-Volatile Organic Compounds**

(ug/Kg)

bis(2-Chloroisopropyl)ether						1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U
bis(2-Ethylhexyl)phthalate	1.0E7 ( C )	1.00E+07	NLV	NLV	8.90E+08	2,200 U	22,000 U	11,000 U	3,100	2,200 U	680
Butylbenzylphthalate	3.10E+05 ( C )	3.10E+05	NLV	NLV	2.10E+10	1,100 U	11,000 U	5,400 U	6,000	1,100 U	1,100
Carbazole	2.40E+06	NA	NLV	NLV	ID	21,000	37,000 U	140,000	40,000	3,600 U	940
Chrysene	8.00E+06	NA	ID	ID	ID	56,000	76,000	390,000	78,000	7,800	2,700
Dibenzo(a,h)anthracene	8,000	NA	NLV	NLV	ID	9,700	22,000 U	25,000	14,000	2,200 U	220 U
Dibenzofuran	ID	NA	ID	ID	ID	16,000	39,000	67,000	25,000	9,700	3,500
Diethylphthalate	7.4E+05 ( C )	7.40E+05	NLV	NLV	1.50E+09	1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U
Dimethylphthalate	7.90E+05 ( C )	7.90E+05	NLV	NLV	1.50E+09	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	300
Di-n-butylphthalate	7.60E+05 ( C )	7.60E+05	NLV	NLV	1.50E+09	1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	150
Di-n-octylphthalate	2.00E+07	1.40E+08	NLV	NLV	ID	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
Fluorene	8.70E+07	NA	1.00E+09 ( D )	1.50E+08	4.10E+09	3,600	11,000 U	110,000	24,000	4,100	260
Fluoranthene	1.30E+08	NA	1.00E+09 ( D )	8.90E+08	4.10E+09	160,000	240,000	960,000	270,000	41,000	7,600
Hexachlorobenzene	37,000	NA	2.20E+05	5.60E+04	ID	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
Hexachlorobutadiene	3.50E+05 ( C )	3.50E+05	3.50E+05 ( C )	4.60E+05	1.80E+08	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
Hexachlorocyclopentadiene	7.20E+05 ( C )	7.20E+05	56,000	60,000	5.90E+06	22,000 U	220,000 U	110,000 U	22,000 U	22,000 U	2,200 U
Hexachloroethane	7.30E+05	NA	79,000	6.60E+05	1.00E+08	1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U
Indeno(1,2,3-cd)pyrene	80,000	NA	NLV	NLV	ID	28,000	22,000 U	210,000	43,000	3,200	220 U
Isophorone	2.4E+06 ( C )	2.40E+06	NLV	NLV	8.20E+09	1,100 U	11,000 U	5,400 U	1,100 U	1,100 U	110 U
Naphthalene	5.20E+07	NA	4.70E+05	3.50E+05	8.80E+07	3,700	11,000 U	84,000	7,900	1,100 U	1,800
Nitrobenzene	3.40E+05	4.90E+05	1.70E+05	64,000	2.10E+07	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
N-Nitrosodimethylamine						3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
N-Nitroso-di-n-propylamine	5,400	1.50E+06	NLV	NLV	2.00E+06	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
N-Nitrosodiphenylamine	7.80E+06	NA	NLV	NLV	ID	2,200 U	22,000 U	11,000 U	2,200 U	2,200 U	220 U
Pentachlorophenol	3.20E+05	NA	NLV	NLV	1.30E+08	37,000 U	380,000 U	180,000 U	37,000 U	37,000 U	3,700 U
Phenanthrene	5.20E+06	NA	5.10E+06	1.90E+05	2.90E+06	160,000	300,000	810,000	270,000	71,000	14,000
Phenol	1.2E+07 ( C,DD )	1.20E+07	NLV	NLV	1.80E+10	3,600 U	37,000 U	18,000 U	3,600 U	3,600 U	360 U
Pyrene	8.40E+07	NA	1.00E+09 ( D )	7.80E+08	2.90E+09	110,000	130,000	720,000	140,000	23,000	5,200

**Table TM-1-5.1**  
**Semi-Volatile Compounds in Concrete (Residential Criteria)**  
**Spring 2004**  
**Carter Color Coat**  
**Detroit, Michigan**

Sample Location:					SWMU1 SB1 (CON) 4/26/2004	SWMU1 SB2 (CON) 4/26/2004	SWMU1 SB3 (CON) 4/26/2004	SWMU1 SB3 (CON) 4/27/2004	SWMU1 SB4 (CON) 4/26/2004	SWMU1 SB5 (CON) 4/26/2004
Sample Date:										DUPLICATE
<b>MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA</b>										
Semi-Volatile Organic Compounds (ug/Kg)	Direct Contact Residential & Commercial I	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation					
<b>Semi-Volatile Organic Compounds</b>										
1,2,4-Trichlorobenzene	9.9E+05 (DD)	1.1E+06	1.10E+06 (C)	2.80E+07	2.50E+10	210 U	240 U	210 U	210 U	200 U
1,2-Dichlorobenzene	2.1E+05 (C)	2.10E+05	2.10E+05 (C)	3.90E+07	1.00E+11	100 U	120 U	100 U	110 U	100 U
1,3-Dichlorobenzene	1.7E+05 (C)	1.70E+05	ID	ID	ID	100 U	120 U	100 U	110 U	100 U
1,4-Dichlorobenzene	4.0E+05	NA	19,000	77,000	4.50E+08	100 U	120 U	100 U	110 U	100 U
2,4,5-Trichlorophenol	2.30E+07	NA	NLV	NLV	2.30E+10	340 U	400 U	340 U	350 U	340 U
2,4,6-Trichlorophenol	7.1E+05	NA	NLV	NLV	1.00E+09	340 U	400 U	340 U	350 U	340 U
2,4-Dichlorophenol	6.6E+05 (DD)	1.8E+06	NLV	NLV	5.10E+09	340 U	400 U	340 U	350 U	340 U
2,4-Dimethylphenol	1.1E+07	NA	NLV	NLV	4.70E+09	340 U	400 U	340 U	350 U	340 U
2,4-Dinitrophenol						1,800 U	2,100 U	1,800 U	1,800 U	1,800 U
2,4-Dinitrotoluene	48,000	NA	NLV	NLV	1.60E+07	340 U	400 U	340 U	350 U	340 U
2,6-Dinitrotoluene						340 U	400 U	340 U	350 U	340 U
2-Chloronaphthalene	5.70E+07	NA	ID	ID	ID	210 U	240 U	210 U	210 U	200 U
2-Chlorophenol	1.40E+06	1.90E+07	ID	ID	ID	340 U	400 U	340 U	350 U	340 U
2-Methyl-4,6-dinitrophenol	79000	NA	NLV	NLV	ID	1,800 U	2,100 U	1,800 U	1,800 U	1,700 U
2-Methylnaphthalene	8.10E+06	NA	ID	ID	ID	260 U	300 U	260 U	270 U	250 U
2-Methylphenol	1.10E+07	NA	NLV	NLV	6.70E+09	340 U	400 U	340 U	350 U	340 U
2-Nitroaniline						1,800 U	2,100 U	1,800 U	1,800 U	1,700 U
2-Nitrophenol	6.3E+05	NA	NLV	NLV	ID	340 U	400 U	340 U	350 U	340 U
3,4-Methylphenol	1.10E+07	NA	NLV	NLV	6.70E+09	690 U	800 U	680 U	700 U	680 U
3-Nitroaniline						1,800 U	2,100 U	1,800 U	1,800 U	1,700 U
4-Bromophenyl-phenylether						210 U	240 U	210 U	210 U	200 U
4-Chloro-3-methylphenol	4.5E+06	NA	NLV	NLV	ID	340 U	400 U	340 U	350 U	340 U
4-Chlorophenyl-phenylether						100 U	120 U	100 U	110 U	100 U
4-Nitroaniline						1,800 U	2,100 U	1,800 U	1,800 U	1,700 U
4-Nitrophenol						1,800 U	2,100 U	1,800 U	1,800 U	1,700 U
Acenaphthene	4.10E+07	NA	1.90E+08	8.10E+07	1.40E+10	100 U	120 U	100 U	110 U	100 U
Acenaphthylene	1.6E+06	NA	1.6E+06	2.20E+06	2.30E+06	100 U	120 U	100 U	110 U	100 U
Anthracene	2.30E+08	NA	1.00E+09 (D)	1.40E+09	6.70E+10	100 U	120 U	100 U	110 U	100 U
Azobenzene	1.40E+05	NA	6.10E+06	6.30E+05	1.00E+08	210 U	240 U	210 U	210 U	200 U
Benzo(a)anthracene	20,000	NA	NLV	NLV	ID	100 U	120 U	100 U	110 U	100 U
Benzo(a)pyrene	2,000	NA	NLV	NLV	1.50E+06	210 U	240 U	210 U	210 U	200 U
Benzo(b)fluoranthene	20,000	NA	ID	ID	ID	210 U	240 U	210 U	210 U	200 U

**Table TM 1-5.1**  
**Semi-Volatile Compounds in Concrete (Residential Criteria)**

Spring 2004  
 Carter Color Coat  
 Detroit, Michigan

Sample Location:					SWMU1 SB1 (CON)	SWMU1 SB2 (CON)	SWMU1 SB3 (CON)	SWMU1 SB3 (CON)	SWMU1 SB4 (CON)	SWMU1 SB5 (CON)
Sample Date:					4/26/2004	4/26/2004	4/26/2004	4/27/2004	4/26/2004	4/26/2004
MDEC PART 201 INDUSTRIAL CLEANUP CRITERIA										
	Direct Contact Residential & Commercial I	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation					
<b>Semi-Volatile Organic Compounds (<math>\mu</math>g/Kg)</b>										
Benzo(g,h,i)perylene	2.5E+06	NA	NLV	NLV	8.00E+08	210 U	240 U	210 U	210 U	200 U
Benzo(k)fluoranthene	2.0E+05	NA	NLV	NLV	ID	210 U	240 U	210 U	210 U	200 U
bis(2-Chloroethoxy)methane	ID	2.70E+06	NLV	NLV	ID	210 U	240 U	210 U	210 U	200 U
bis(2-Chloroethyl)ether	13,000	2.20E+06	8,300	3,800	9.40E+06	100 U	120 U	100 U	110 U	100 U
bis(2-Chloroisopropyl)ether						100 U	120 U	100 U	110 U	100 U
bis(2-Ethylhexyl)phthalate	2.80E+06	1.00E+07	NLV	NLV	7.00E+08	210 U	240 U	210 U	210 U	2,000
Butylbenzylphthalate	3.10E+05 (C)	3.10E+05	NLV	NLV	4.70E+10	100 U	120 U	100 U	110 U	100 U
Carbazole	5.30E+05	NA	NLV	NLV	ID	340 U	400 U	340 U	350 U	340 U
Chrysene	2.00E+06	NA	ID	ID	ID	100 U	120 U	100 U	110 U	100 U
Dibenzo(a,h)anthracene	2,000	NA	NLV	NLV	ID	210 U	240 U	210 U	210 U	200 U
Dibenzofuran	ID	NA	ID	ID	ID	340 U	400 U	340 U	210 U	340 U
Diethylphthalate	7.4E+05 ( C)	7.40E+05	NLV	NLV	3.30E+09	100 U	120 U	100 U	110 U	100 U
Dimethylphthalate	7.90E+05 ( C)	7.90E+05	NLV	NLV	3.30E+09	210 U	240 U	210 U	210 U	200 U
Di-n-butylphthalate	7.60E+05 ( C)	7.60E+05	NLV	NLV	3.30E+09	100 U	120 U	100 U	110 U	100 U
Di-n-octylphthalate	6.90E+06	1.40E+08	NLV	NLV	ID	210 U	240 U	210 U	210 U	200 U
Fluorene	2.70E+07	NA	5.80E+08	1.30E+08	9.30E+09	100 U	120 U	100 U	110 U	100 U
Fluoranthene	4.60E+07	NA	1.00E+09 (D)	7.40E+08	9.30E+09	100 U	120 U	100 U	110 U	100 U
Hexachlorobenzene	8,900	NA	41000	17000	6.80E+06	210 U	240 U	210 U	210 U	200 U
Hexachlorobutadiene	1.00E+05	3.50E+05	1.30E+05	1.30E+05	1.40E+08	210 U	240 U	210 U	210 U	200 U
Hexachlorocyclopentadiene	7.20E+05 ( C)	7.20E+05	30,000	50,000	1.30E+07	2,100 U	2,400 U	2,100 U	2,100 U	2,000 U
Hexachloroethane	2.30E+05	NA	40,000	5.50E+05	2.30E+08	100 U	120 U	100 U	110 U	100 U
Indeno(1,2,3-cd)pyrene	20,000	NA	NLV	NLV	ID	210 U	240 U	210 U	210 U	200 U
Isophorone	2.4E+06 ( C)	2.40E+06	NLV	NLV	1.20E+10	100 U	120 U	100 U	110 U	100 U
Naphthalene	1.60E+07	NA	2.50E+05	3.00E+05	2.00E+08	100 U	120 U	100 U	110 U	100 U
Nitrobenzene	1.00E+05	4.90E+05	200 (M)	200 (M)	200 (M)	210 U	240 U	210 U	210 U	200 U
N-Nitrosodimethylamine						340 U	400 U	340 U	350 U	340 U
N-Nitroso-di-n-propylamine	1,200	1.50E+06	NLV	NLV	1.60E+06	210 U	240 U	210 U	210 U	200 U
N-Nitrosodiphenylamine	1.70E+06	NA	NLV	NLV	ID	210 U	240 U	210 U	210 U	200 U
Pentachlorophenol	3.20E+05	NA	NLV	NLV	1.30E+08	3,500 U	4,100 U	3,500 U	3,600 U	3,500 U
Phenanthrene	1.60E+06	NA	2.80E+06	1.60E+05	6.70E+06	100 U	120 U	100 U	110 U	100 U
Phenol	1.2E+07 (C,DD)	1.20E+07	NLV	NLV	4.00E+10	340 U	400 U	340 U	350 U	340 U
Pyrene	2.90E+07	NA	1.00E+09 (D)	6.50E+08	6.70E+09	100 U	120 U	100 U	110 U	100 U

Table TM-1.5.1  
Semi-Volatile Compounds in Concrete (Residential Criteria)  
Spring 2004  
Carter Color Coat  
Detroit, Michigan

Sample Location:					SWMU1:SB6 (CON)	SWMU1: SB7( CON)	SWMU1:SB8 (CON)	SWMU2:CS1 (CON)	SWMU2:CS2 (CON)	SWMU3:CS1 (CON)	
Sample Date:					4/27/2004	4/27/2004	4/27/2004	4/28/2004	4/28/2004	4/29/2004	
MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA											
	Direct Contact Residential & Commercial I	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation						
<b>Semi-Volatile Organic Compounds (ug/Kg)</b>											
1,2,4-Trichlorobenzene	9.9E+05 (DD)	1.1E+06	1.10E+06 ( C)	2.80E+07	2.50E+10	210 U	210 U	210 U	210 U	360 U	200 U
1,2-Dichlorobenzene	2.1E+05 ( C)	2.10E+05	2.10E+05 ( C)	3.90E+07	1.00E+11	100 U	100 U	100 U	110 U	360 U	100 U
1,3-Dichlorobenzene	1.7E+05 ( C)	1.70E+05	ID	ID	ID	100 U	100 U	100 U	110 U	360 U	100 U
1,4-Dichlorobenzene	4.0E+05	NA	19,000	77,000	4.50E+08	100 U	100 U	100 U	110 U	360 U	100 U
2,4,5-Trichlorophenol	2.30E+07	NA	NLV	NLV	2.30E+10	350 U	340 U	350 U	350 U	360 U	340 U
2,4,6-Trichlorophenol	7.1E+05	NA	NLV	NLV	1.00E+09	350 U	340 U	350 U	350 U	330 U	340 U
2,4-Dichlorophenol	6.6E+05 (DD)	1.8E+06	NLV	NLV	5.10E+09	350 U	340 U	350 U	350 U	360 U	340 U
2,4-Dimethylphenol	1.1E+07	NA	NLV	NLV	4.70E+09	350 U	340 U	350 U	350 U	360 U	340 U
2,4-Dinitrophenol						1,800 U	1,800 U	1,800 U	1,800 U	1,700 U	1,700 U
2,4-Dinitrotoluene	48,000	NA	NLV	NLV	1.60E+07	350 U	340 U	350 U	350 U	360 U	340 U
2,6-Dinitrotoluene						350 U	340 U	350 U	350 U	360 U	340 U
2-Chloronaphthalene	5.70E+07	NA	ID	ID	ID	210 U	210 U	210 U	210 U	360 U	200 U
2-Chlorophenol	1.40E+06	1.90E+07	ID	ID	ID	350 U, 3	340 U	350 U	350 U	360 U	340 U
2-Methyl-4,6-dinitrophenol	79000	NA	NLV	NLV	ID	1,800 U	1,800 U	1,800 U	1,800 U	360 U	1,700 U
2-Methylnaphthalene	8.10E+06	NA	ID	ID	ID	260 U	260 U	260 U	270 U	360 U	250 U
2-Methylphenol	1.10E+07	NA	NLV	NLV	6.70E+09	350 U	340 U	350 U	350 U	360 U	340 U
2-Nitroaniline						1,800 U	1,800 U	1,800 U	1,800 U	360 U	1,700 U
2-Nitrophenol	6.3E+05	NA	NLV	NLV	ID	350 U	340 U	350 U	350 U	360 U	340 U
3/4-Methylphenol	1.10E+07	NA	NLV	NLV	6.70E+09	690 U	680 U	690 U	710 U	360 U	670 U
3-Nitroaniline						1,800 U	1,800 U	1,800 U	1,800 U	360 U	1,700 U
4-Bromophenyl-phenylether						210 U	210 U	210 U	210 U	360 U	200 U
4-Chloro-3-methylphenol	4.5E+06	NA	NLV	NLV	ID	350 U, 3	340 U	350 U	350 U	360 U	340 U
4-Chlorophenyl-phenylether						100 U	100 U	100 U	110 U	360 U	100 U
4-Nitroaniline						1,800 U	1,800 U	1,800 U	1,800 U	360 U	1,700 U
4-Nitrophenol						1,800 U, 3	1,800 U	1,800 U	1,800 U	1,700 U	1,700 U
Acenaphthene	4.10E+07	NA	1.90E+08	8.10E+07	1.40E+10	100 U	100 U	100 U	110 U	360 U	100 U
Acenaphthylene	1.6E+06	NA	1.6E+06	2.20E+06	2.30E+06	100 U	100 U	100 U	110 U	360 U	100 U
Anthracene	2.30E+08	NA	1.00E+09 (D)	1.40E+09	6.70E+10	100 U	100 U	100 U	110 U	360 U	160
Azobenzene	1.40E+05	NA	6.10E+06	6.30E+05	1.00E+08	210 U	210 U	210 U	210 U	360 U	200 U
Benzo(a)anthracene	20,000	NA	NLV	NLV	ID	100 U	100 U	100 U	220	80	860
Benzo(a)pyrene	2,000	NA	NLV	NLV	1.50E+06	210 U	210 U	210 U	210 U	69 U	200 U
Benzo(b)fluoranthene	20,000	NA	ID	ID	ID	210 U	210 U	210 U	210 U	80	2,800

Table TM-1.5.1  
Semi-Volatile Compounds in Concrete (Residential Criteria)  
Spring 2004  
Carter Color Coat  
Detroit, Michigan

Sample Location:					SWMU1:SB6 (CON)	SWMU1: SB7 (CON)	SWMU1:SB8 (CON)	SWMU2:CS1 (CON)	SWMU2:CS2 (CON)	SWMU3:CS1 (CON)
Sample Date:					4/27/2004	4/27/2004	4/27/2004	4/28/2004	4/28/2004	4/29/2004
MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA										
	Direct Contact Residential & Commercial I	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation					
<b>Semi-Volatile Organic Compounds (ug/Kg)</b>										
Benzene(g,h,i)perylene	2.5E+06	NA	NLV	NLV	8.00E+08	210 U	210 U	210 U	360 U	460
Benzo(k)fluoranthene	2.0E+05	NA	NLV	NLV	ID	210 U	210 U	210 U	360 U	890
bis(2-Chloroethoxy)methane	ID	2.70E+06	NLV	NLV	ID	210 U	210 U	210 U	360 U	200 U
bis(2-Chloroethyl)ether	13,000	2.20E+06	8,300	3,800	9.40E+06	100 U	100 U	100 U	110 U	69 U
bis(2-Chloroisopropyl)ether						100 U	100 U	100 U	110 U	100 U
bis(2-Ethylhexyl)phthalate	2.80E+06	1.00E+07	NLV	NLV	7.00E+08	210 U	3,400	210 U	210 U	360 U
Butylbenzylphthalate	3.10E+05 (C)	3.10E+05	NLV	NLV	4.70E+10	100 U	100 U	100 U	110 U	360 U
Carbazole	5.30E+05	NA	NLV	NLV	ID	350 U	340 U	350 U	350 U	360 U
Chrysene	2.00E+06	NA	ID	ID	ID	100 U	100 U	100 U	100 U	340 U
Dibenzo(a,h)anthracene	2,000	NA	NLV	NLV	ID	210 U	210 U	210 U	210 U	69 U
Dibenzo furan	ID	NA	ID	ID	ID	350 U	340 U	350 U	210 U	360 U
Diethylphthalate	7.4E+05 (C)	7.40E+05	NLV	NLV	3.30E+09	100 U	100 U	100 U	110 U	360 U
Dimethylphthalate	7.90E+05 (C)	7.90E+05	NLV	NLV	3.30E+09	210 U	210 U	210 U	210 U	200 U
Di-n-butylphthalate	7.60E+05 (C)	7.60E+05	NLV	NLV	3.30E+09	100 U	100 U	100 U	110 U	360 U
Di-n-octylphthalate	6.90E+06	1.40E+08	NLV	NLV	ID	210 U	210 U	210 U	210 U	200 U
Fluorene	2.70E+07	NA	5.80E+08	1.30E+08	9.30E+09	100 U	100 U	100 U	110 U	360 U
Fluoranthene	4.60E+07	NA	1.00E+09 (D)	7.40E+08	9.30E+09	100 U	100 U	100 U	3,900	1,100
Hexachlorobenzene	8,900	NA	41000	17000	6.80E+06	210 U	210 U	210 U	360 U	200 U
Hexachlorobutadiene	1.00E+05	3.50E+05	1.30E+05	1.30E+05	1.40E+08	210 U	210 U	210 U	360 U	200 U
Hexachlorocyclopentadiene	7.20E+05 (C)	7.20E+05	30,000	50,000	1.30E+07	2,100 U	2,100 U	2,100 U	2,100 U	360 U
Hexachloroethane	2.30E+05	NA	40,000	5.50E+05	2.30E+08	100 U	100 U	100 U	110 U	360 U
Indeno(1,2,3-cd)pyrene	20,000	NA	NLV	NLV	ID	210 U	210 U	210 U	210 U	69 U
Isophorone	2.4E+06 (C)	2.40E+06	NLV	NLV	1.20E+10	100 U	100 U	100 U	110 U	360 U
Naphthalene	1.60E+07	NA	2.50E+05	3.00E+05	2.00E+08	420 M	100 U	100 U	110 U	360 U
Nitrobenzene	1.00E+05	4.90E+05	200 (M)	200 (M)	200 (M)	210 U	210 U	210 U	210 U	69 U
N-Nitrosodimethylamine						350 U	340 U	350 U	350 U	360 U
N-Nitroso-di-n-propylamine	1,200	1.50E+06	NLV	NLV	1.60E+06	210 U	210 U	210 U	210 U	200 U
N-Nitrosodiphenylamine	1.70E+06	NA	NLV	NLV	ID	210 U	210 U	210 U	210 U	200 U
Pentachlorophenol	3.20E+05	NA	NLV	NLV	1.30E+08	3,600 U	3,500 U	3,600 U	3,600 U	360 U
Phenanthrene	1.60E+06	NA	2.80E+06	1.60E+05	6.70E+06	100 U	100 U	100 U	3,100	1,300
Phenol	1.2E+07 (C,DD)	1.20E+07	NLV	NLV	4.00E+10	350 U	340 U	350 U	350 U	340 U
Pyrene	2.90E+07	NA	1.00E+09 (D)	6.50E+08	6.70E+09	100 U	100 U	100 U	3,200	720

Table TM-4-5.1  
Semi-Volatile Compounds in Concrete (Residential Criteria)  
Spring 2004  
Carter Color Coat  
Detroit, Michigan

Sample Location:					SWMU4 CS1 (CON)	SWMU5 CS1 (CON)	SWMU5 CS1 (CON)	SWMU5 CS2 (CON)	SWMU5 CS2 (CON)	SWMU5 CS3 (CON)	
Sample Date:					4/28/2004	4/28/2004	4/29/2004	4/28/2004	4/29/2004	4/29/2004	
MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA						DUPLICATE					
	Direct Contact Residential & Commercial I	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation						
<b>Semi-Volatile Organic Compounds</b> <b>(ug/Kg)</b>											
1,2,4-Trichlorobenzene	9.9E+05 (DD)	1.1E+06	1.10E+06 ( C)	2.80E+07	2.50E+10	360 U	210 U	210 U	870 U	210 U	250 U
1,2-Dichlorobenzene	2.1E+05 ( C)	2.10E+05	2.10E+05 ( C)	3.90E+07	1.00E+11	360 U	100 U	100 U	870 U	100 U	120 U
1,3-Dichlorobenzene	1.7E+05 ( C)	1.70E+05	ID	ID	ID	360 U	100 U	100 U	870 U	100 U	120 U
1,4-Dichlorobenzene	4.0E+05	NA	19,000	77,000	4.50E+08	360 U	100 U	100 U	870 U	100 U	120 U
2,4,5-Trichlorophenol	2.30E+07	NA	NLV	NLV	2.30E+10	360 U	340 U	340 U	870 U	340 U	410 U
2,4,6-Trichlorophenol	7.1E+05	NA	NLV	NLV	1.00E+09	330 U	340 U	340 U	330 U	340 U	410 U
2,4-Dichlorophenol	6.6E+05 (DD)	1.8E+06	NLV	NLV	5.10E+09	360 U	340 U	340 U	870 U	340 U	410 U
2,4-Dimethylphenol	1.1E+07	NA	NLV	NLV	4.70E+09	360 U	340 U	340 U	870 U	340 U	410 U
2,4-Dinitrophenol						1,700 U	1,800 U	1,800 U	3,400 U	1,800 U	2,100 U
2,4-Dinitrotoluene	48,000	NA	NLV	NLV	1.60E+07	360 U	340 U	340 U	870 U	340 U	410 U
2,6-Dinitrotoluene						360 U	340 U	340 U	870 U	340 U	410 U
2-Chloronaphthalene	5.70E+07	NA	ID	ID	ID	360 U	210 U	210 U	870 U	210 U	250 U
2-Chlorophenol	1.40E+06	1.90E+07	ID	ID	ID	360 U	340 U	340 U	870 U	340 U	410 U
2-Methyl-4,6-dinitrophenol	79000	NA	NLV	NLV	ID	360 U	1,800 U	1,800 U	870 U	1,800 U	2,100 U
2-Methylnaphthalene	8.10E+06	NA	ID	ID	ID	360 U	260 U	260 U	870 U	260 U	310 U
2-Methylphenol	1.10E+07	NA	NLV	NLV	6.70E+09	360 U	340 U	340 U	870 U	340 U	410 U
2-Nitroaniline						360 U	1,800 U	1,800 U	870 U	1,800 U	2,100 U
2-Nitrophenol	6.3E+05	NA	NLV	NLV	ID	360 U	340 U	340 U	870 U	340 U	410 U
3/4-Methylphenol	1.10E+07	NA	NLV	NLV	6.70E+09	360 U	690 U	680 U	870 U	680 U	820 U
3-Nitroaniline						360 U	1,800 U	1,800 U	870 U	1,800 U	2,100 U
4-Bromophenyl-phenylether						360 U	210 U	210 U	870 U	210 U	250 U
4-Chloro-3-methylphenol	4.5E+06	NA	NLV	NLV	ID	360 U	340 U	340 U	870 U	340 U	410 U
4-Chlorophenyl-phenylether						360 U	100 U	100 U	870 U	100 U	120 U
4-Nitroaniline						360 U	1,800 U	1,800 U	870 U	1,800 U	2,100 U
4-Nitrophenol						1,700 U	1,800 U	1,800 U	3,400 U	1,800 U	2,100 U
Acenaphthene	4.10E+07	NA	1.90E+08	8.10E+07	1.40E+10	360 U	100 U	100 U	870 U	100 U	120 U
Acenaphthylene	1.6E+06	NA	1.6E+06	2.20E+06	2.30E+06	360 U	100 U	100 U	870 U	100 U	120 U
Anthracene	2.30E+08	NA	1.00E+09 (D)	1.40E+09	6.70E+10	360 U	160	100 U	870 U	100 U	120 U
Azobenzene	1.40E+05	NA	6.10E+06	6.30E+05	1.00E+08	360 U	210 U	210 U	870 U	210 U	250 U
Benzo(a)anthracene	20,000	NA	NLV	NLV	ID	69 U	100 U	410	170 U	100 U	210
Benzo(a)pyrene	2,000	NA	NLV	NLV	1.50E+06	69 U	300	270	170 U	210 U	250 U
Benzo(b)fluoranthene	20,000	NA	ID	ID	ID	69 U	710	440	170 U	280	380

**Table TM 1-5.1**  
**Semi-Volatile Compounds in Concrete (Residential Criteria)**  
**Spring 2004**  
**Carter Color Coat**  
**Detroit, Michigan**

Sample Location:	SWMU4 CS1 (CON) 4/28/2004	SWMU5 CS1 (CON) 4/28/2004	SWMU5 CS1 (CON) 4/29/2004	SWMU5 CS2 (CON) 4/28/2004	SWMU5 CS2 (CON) 4/29/2004	SWMU5 CS3 (CON) 4/29/2004
Sample Date:	DUPLICATE					
MDEQ PART 201 INDUSTRIAL CLEANUP CRITERIA						
	Direct Contact Residential & Commercial I	Soil Saturation Concentration Screening	Volatilization to Indoor Air	Infinite Source Volatile Soil Inhalation	Particulate Soil Inhalation	
<b>Semi-Volatile Organic Compounds (ug/Kg)</b>						
Benzog(h,i)perylene	2.5E+06	NA	NLV	NLV	8.00E+08	360 U      210 U      210 U      870 U      210 U      250 U
Benzo(k)fluoranthene	2.0E+05	NA	NLV	NLV	ID	360 U      280      210 U      870 U      210 U      250 U
bis(2-Chloroethoxy)methane	ID	2.70E+06	NLV	NLV	ID	360 U      210 U      210 U      870 U      210 U      250 U
bis(2-Chloroethyl)ether	13,000	2.20E+06	8,300	3,800	9.40E+06	69 U      100 U      100 U      170 U      100 U      120 U
bis(2-Chloroisopropyl)ether						360 U      100 U      100 U      870 U      100 U      120 U
bis(2-Ethylhexyl)phthalate	2.80E+06	1.00E+07	NLV	NLV	7.00E+08	360 U      400      210 U      870 U      330      640
Butylbenzylphthalate	3.10E+05 (C)	3.10E+05	NLV	NLV	4.70E+10	360 U      100 U      100 U      870 U      150      120 U
Carbazole	5.30E+05	NA	NLV	NLV	ID	360 U      340 U      340 U      870 U      340 U      410 U
Chrysene	2.00E+06	NA	ID	ID	ID	360 U      520      670      870 U      410      430
Dibenzo(a,h)anthracene	2,000	NA	NLV	NLV	ID	69 U      210 U      210 U      170 U      210 U      250 U
Dibenzofuran	ID	NA	ID	ID	ID	360 U      340 U      340 U      870 U      340 U      410 U
Diethylphthalate	7.4E+05 ( C)	7.40E+05	NLV	NLV	3.30E+09	360 U      100 U      100 U      870 U      100 U      350
Dimethylphthalate	7.90E+05 ( C)	7.90E+05	NLV	NLV	3.30E+09	360 U      210 U      210 U      870 U      210 U      250 U
Di-n-butylphthalate	7.60E+05 ( C)	7.60E+05	NLV	NLV	3.30E+09	360 U      100 U      100 U      870 U      100 U      120 U
Di-n-octylphthalate	6.90E+06	1.40E+08	NLV	NLV	ID	360 U      210 U      210 U      870 U      210 U      250 U
Fluorene	2.70E+07	NA	5.80E+08	1.30E+08	9.30E+09	360 U      100 U      100 U      870 U      100 U      120 U
Fluoranthene	4.60E+07	NA	1.00E+09 (D)	7.40E+08	9.30E+09	360 U      1,900      1,700      870 U      820      750
Hexachlorobenzene	8,900	NA	41000	17000	6.80E+06	360 U      210 U      210 U      870 U      210 U      250 U
Hexachlorobutadiene	1.00E+05	3.50E+05	1.30E+05	1.30E+05	1.40E+08	360 U      210 U      210 U      870 U      210 U      250 U
Hexachlorocyclopentadiene	7.20E+05 ( C)	7.20E+05	30,000	50,000	1.30E+07	360 U      2,100 U      2,100 U      870 U      2,100 U      2,500 U
Hexachloroethane	2.30E+05	NA	40,000	5.50E+05	2.30E+08	360 U      100 U      100 U      870 U      100 U      120 U
Indeno(1,2,3-cd)pyrene	20,000	NA	NLV	NLV	ID	69 U      210 U      210 U      170 U      210 U      250 U
Isophorone	2.4E+06 ( C)	2.40E+06	NLV	NLV	1.20E+10	360 U      100 U      100 U      870 U      100 U      120 U
Naphthalene	1.60E+07	NA	2.50E+05	3.00E+05	2.00E+08	360 U      290      100 U      870 U      130      120 U
Nitrobenzene	1.00E+05	4.90E+05	200 (M)	200 (M)	200 (M)	69 U      210 U      210 U      170 U      210 U      250 U
N-Nitrosodimethylamine						360 U      340 U      340 U      870 U      340 U      410 U
N-Nitroso-di-n-propylamine	1,200	1.50E+06	NLV	NLV	1.60E+06	360 U      210 U      210 U      870 U      210 U      250 U
N-Nitrosodiphenylamine	1.70E+06	NA	NLV	NLV	ID	360 U      210 U      210 U      870 U      210 U      250 U
Pentachlorophenol	3.20E+05	NA	NLV	NLV	1.30E+08	360 U      3,500 U      3,500 U      870 U      3,500 U      4,200 U
Phenanthrene	1.60E+06	NA	2.80E+06	1.60E+05	6.70E+06	390      1,200      920      870 U      500      450
Phenol	1.2E+07 (C,DD)	1.20E+07	NLV	NLV	4.00E+10	360 U      340 U      340 U      870 U      340 U      410 U
Pyrene	2.90E+07	NA	1.00E+09 (D)	6.50E+08	6.70E+09	360 U      850      1,200      870 U      700      470